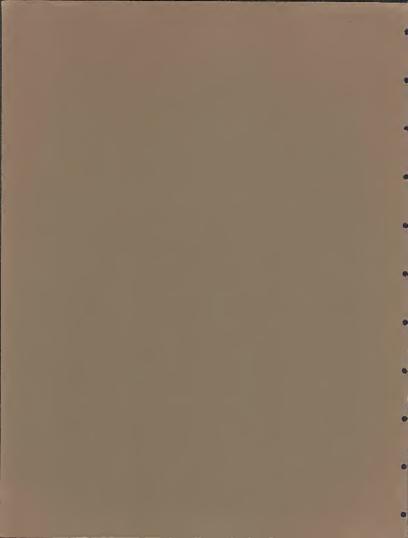


### EASTERN GULF OF MEXICO MARINE HABITAT STUDY

Prepared for

U.S. Department of the Interior Bureau of Land Management Washington, D.C. 20240

January 1979



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### Volume 3

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#### VOLUME 3

#### OPERATION REPORTS

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- 3.0 GEOPHYSICAL SURVEY REPORTS
  - 3.1 Chief Scientist's Log

    - 3.2 Time Allotment 3.3 Daily Operational Log
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- 4.0 GROUND TRUTH SURVEY REPORTS
  - 4.1 Chief Scientist's Log
  - 4.2 Time Allotment
  - 4.3 Daily Operational Log
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#### 1.0 INTRODUCTION

The Bureau of Land Management determined that geophysical, bathymetric and ground truth surveys were necessary in 49 of the tracts proposed for Lease Sale 65 in order to identify areas in which the lithotope favors the accumulation of critical biota. The 49 selected tracts are grouped into 10 map areas listed in Table 1-1.

The geophysical and bathymetric survey pattern for each block was designed to supplement the data which had been previously collected by the U.S. Geological Survey for the Geological Hazards Survey. Data from the following geophysical systems was collected along each of the survey lines.

Precision depth sounder with narrow-beam transducer

Dual side scan sonar

High-resolution sub-bottom profiler utilizing a tuned transducer (3.5 to 12 kHz)

High-resolution seismic sub-bottom profiler, using a mechanical or electrical-mechanical acoustic energy source.

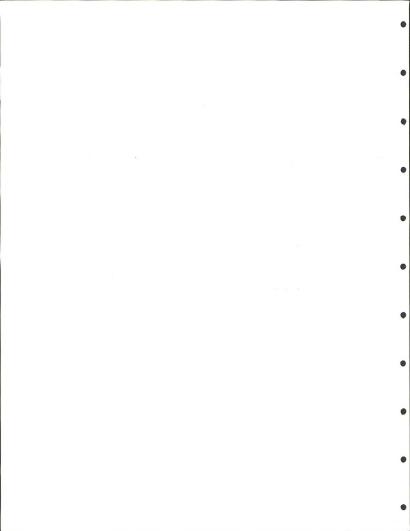
The second phase of this study involved identification of existing marine habitats by means of a ground truth survey. The ground truth survey was conducted along transects which were selected by BLM scientists, based upon the results of the previous geophysical and bathymetric surveys. During the ground truth surveys data were collected from the following systems:

Towed underwater closed circuit television system, with a video recorder and monitor

Underwater 35 mm still camera system with strobe unit

Depth sounder

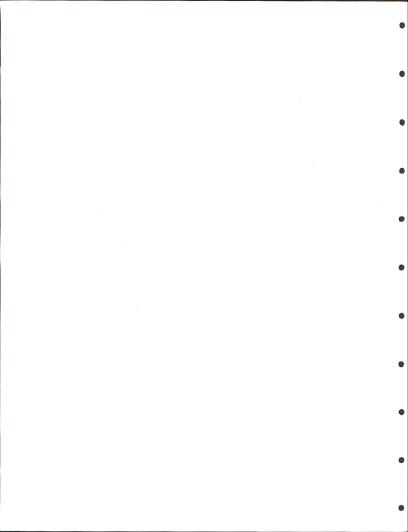
The final report is presented in three volumes. Volume 1 is the technical report; Volume 2 contains the maps and geologic cross sections produced for each of the 10 study areas; Volume 3 is the Operation Reports. The Operation Reports contain operations and instrumentation logs and is intended for use only by those scientists who will be utilizing the original field data.



# TABLE 1-1 EASTERN GULF OF MEXICO MARINE HABITAT STUDY SURVEY AREAS

NUMBER	AREA	BLOCK NUMBERS
1	Penscaola (NH 16-5) Destin Dome (NH 16-8)	884, 928, 972 . 4
2	Destin Dome (NH 16-8)	313, 314, 357, 358
- 3	Destin Dome (NH 16-8)	529, 573, 574, 618, 661, 662
4	Destin Dome (NH 16-8)	473, 474, 518,519, 562, 563
5	Tarpon Springs (NH 17-10)	233, 234, 277, 278, 279
6	The Elbow (NG 16-3)	567, 609, 696, 697
7	Saint Petersburg (NG 17-1)	661, 662, 705, 706
8 .	Saint Petersburg (NG 17-1)	753, 754, 797, 798
9	Charlotte Harbor (NG 17-4)	143, 144, 145, 187, 188, 231
10	Charlotte Harbor (NG 17-4)	583, 584, 627, 628, 671, 672, 715, 716

NOTE: Blocks 715 and 716 of Area 10, Charlotte Harbor are not included in the 49 blocks to be surveyed under this contract. However, interpretation of data from these blocks is presented because they are included in Lease Sale 65 and are contiguous with the remaining blocks in Area 10.



#### 2.0 PROJECT MANAGER'S REPORT

#### 2.1 Summary of Field Operations

The field operations were divided into two cruises; Cruise I, Geophysical Survey; and Cruise II, Ground Truth Survey. This section provides a brief review of the field operations and a description of the equipment utilized in the surveys. Further details of the field operations are given in the Chief Scientist's Logs, Daily Operations Logs, and Instrumentation Logs. These reports are presented in Sections 3 and 4.

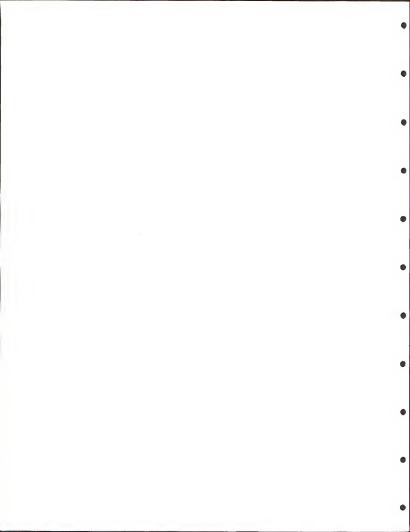
Field operations for the geophysical cruise began with the mobilization of the equipment aboard the survey vessel, M/V Sea Transporter, in Port Arthur, Texas, on 10 July 1978. Mobilization was completed and the boat departed Port Arthur on 13 July and arrived at the first survey area, offshore Pensacola, on 15 July. Survey operations continued on a 24-hour-per-day basis through 14 August 1978. The geophysical cruise was demobilized in St. Petersburg, Florida on 15 August. Details of the operation are presented in Section 3.

The geophysical survey program covered 49 blocks which have been proposed for lease in OCS Lease Sale 65. The 49 blocks which have been suveyed were selected by the BLM. These blocks are grouped into 10 survey areas. For each block the primary survey lines were run at a spacing of 0.8 km with cross lines at 2.4 km intervals. The survey lines equally interspace the existing U.S. Geological Survey Hazard Data. In each block a total of 38.6 km of survey data were collected. The survey vessel utilized for this study was the M/V Sea Transporter, a 40.5 m converted U.S. Navy YF. Further specifications of the Sea Transporter are given in Volume 1.

The geophysical operations included simultaneous data collection from the following systems along each survey line.

Decca Hi-Fix Navigation System with Autocarta Plotting System

EDO Model 4034CM Precision Survey Depth Recorder or Raytheon Model DE719B Precision Depth Recorder



Klein Model 530 Side Scan Sonar/3.5 kHz Sub-Bottom Profiler

EG&G UNIBOOM System

The geophysical equipment is described in Section 3 and Appendix A of Volume 1.

The Ground Truth Survey was designed to provide a permanent videotape and underwater camera record of the marine habitat in selected areas of the 49 blocks covered by the geophysical survey. Unlike the geophysical survey which covered all of the blocks, there was a fixed amount of time available for the ground truth survey; therefore, prior to sailing on Cruise II a firm schedule was prepared to determine the order of the areas to be studied and the length of time to be utilized at each area.

The preliminary results of the geophysical survey were reviewed at a meeting in St. Petersburg on August 14 and 15 by personnel from the BLM, Woodward-Clyde Consultants and Terkeo, the biological consultants. Based on this review, 20 TV and underwater camera transects were laid out for the ground truth survey. Three additional transects were chosen at a later time by the Chief Scientist of Cruise II in order to further delineate side scan sonar targets in Area 3.

The locations selected for the ground truth survey were almost exclusively hard bottom areas or areas that were suspected of having a hard bottom. As such, they represent anomalous areas in considering the overall distribution of bottom sediment characteristics on the Florida Shelf. The hard bottom areas are of particular interest because they provide a suitable substratum for the attachment of benthic epifauna and attract large numbers of demersal fishes.

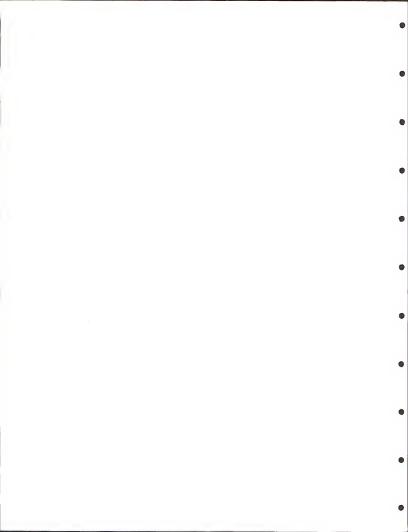
Cruise II began with a mobilization of the equipment aboard the M/V Sea Transporter in St. Petersburg on 15 August. The cruise terminated 28 August in Pensacola. During this cruise the following equipment was aboard the ship.

Decca Hi-Fix Navigation System

Raytheon Model DE719B Fathometer

Hydro Products Underwater TV System with Video Recorder and Monitor

Benthos Underwater 35 mm Camera



During this cruise approximately 33 h of videotape recordings from the underwater TV system and 2,500 color transparencies from the underwater camera were made. The color transparencies were developed aboard ship to insure that the camera system was working properly. The underwater equipment is described in Section 4 and Appendix A of Volume 1.

#### 2.2 Data Reduction, Interpretation and Distribution

In order to minimize delay between the two cruises and to insure a draft report by 1 October 78 the mapping and data interpretation proceeded concurrently with the field work.

The Autocarta system on-board ship insured a post-plot shiptrack map was available at the completion of each survey area. Preliminary data interpretation was accomplished by the Project Geophysicist on board ship. These procedures resulted in preliminary interpretational maps being available for review within 24 hours of the completion of Cruise I.

The following records and maps were obtained in the field or as a result of processing data.

- Navigation post plots at a scale of 1:48,000. These maps are presented in Volume 2.
- Computer listing of grid coordinates for each shot point from both the geophysical survey cruise and the ground truth survey cruise.
- 3. Analog records from the following geophysical systems:

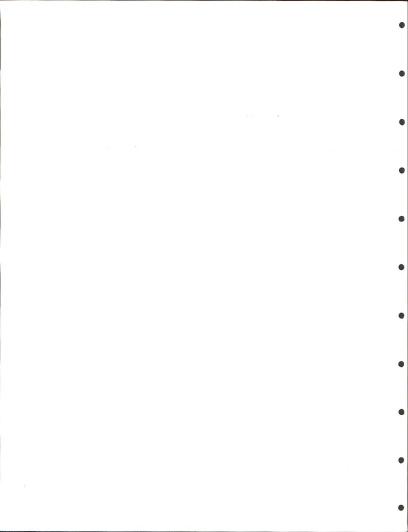
Depth Sounder EG&C UNIBOOM Klein Deeptow Side Scan Sonar/3.5 kHz Sub-Bottom Profiler

- 33 videotapes from the 23 TV transects
- 5. Approximately 2,500 35 mm color transparencies
- 6. Bathymetry and Sea Floor Sediment Characteristic Maps at a scale of 1:48,000. These Maps are presented in Volume 2.
- All daily operations logs and instrument logs. These logs are included in this volume.



Upon completion of the final report all original field records and logs were sent to the Bureau of Land Management, New Orleans OCS Office, Hale Boggs Federal Building, 500 Camp Street, New Orleans, Louisiana. Copies of the data are not being retained by Woodward-Clyde Consultants and all requests for the data should be directed to the Bureau of Land Management.

One microfilm copy of all the geophysical records was sent to the National Geophysical and Solar Terrestrial Data Center, EDS/NOAA in Boulder, Colorado.

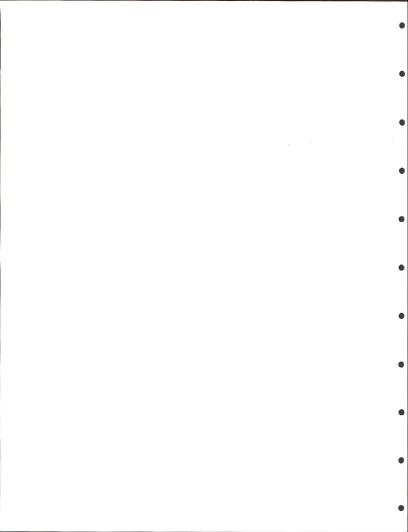


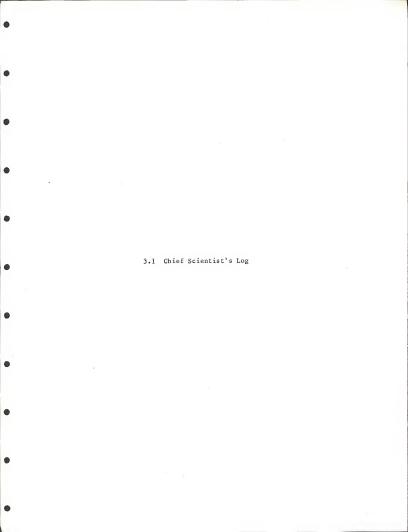
#### 3.0 GEOPHYSICAL SURVEY REPORTS

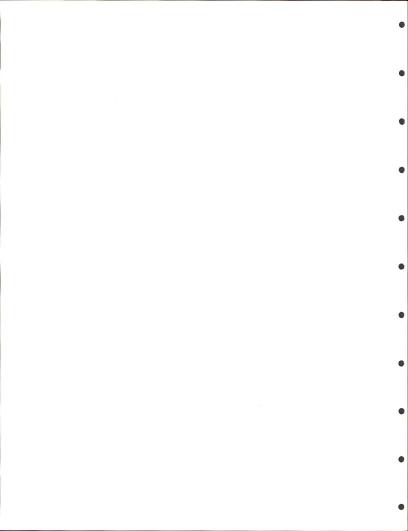
These are four logs which summarize the geophysical survey cruise.

Chief Scientist's Log (Geomarine Field Log) Time Allotment Summary Daily Field Report Instrumentation Log

The Chief Scientist's Log is a summary of the days events. It is kept on a time basis for a 24 hour day. The Time Allotment Summary is a table which summarizes the time spent on various work tasks. It is derived directly from the Chief Scientist's Log. The Daily Field Report lists the crew, equipment and subcontractors employed on the project for each day. The Instrumentation Log lists the recording parameters for each of the instruments. This log is necessary for reduction and interpretation of the analog geophysical records.







			Project	410694
BLM	Rep	Kran		
Eastern Gulf				
		_		
Sea transp	orter at H & H do	ock - MOB boat/e	quipment	
All field	personnel aboard		·	
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	Sea transpo	Sea transporter at H & H dc All field personnel aboard	Sea transporter at H & H dock - MOB boat/e All field personnel aboard	Sea transporter at H & H dock - MOB boat/equipment  All field personnel aboard

### WOODWARD-CLYDE CONSULTANTS

		,		Project	41069A
Client	BLM	Rep	Kran	Date 7	-12-78
Work Area	Eastern Gulf o	f Mexico		Supervisor	Beer
Time					
All Day	Sea transport	er at H & H do	ck - MOB boat/e	equipment	
	Ready to sail	by 2200 hrs			***************************************
	Waiting on re	pair of EDO de	pth recorder		
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### WOODWARD-CLYDE CONSULTANTS

Project 41069A

Client	BLM	Rep	Kran	Date	7-13-78
Work Area	Eastern Gulf	of Mexico	·	Supervi	isor Beer
Time					
0000-0800	Sea transpor	rter alongside	dock. EDO dep	th recorder repa	ired by 0800
0800-1000	Final prepar	rations to get	underway		
1000	Depart H & 1	H dock			
1140	Arrive Shel	l fuel dock in	Port Arthur		
1600	Depart Shel	l dock for sea			
1820	Past outer	channel marker	, enter Gulf of	Mexico	
2400	Enroute to	survey area			
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			WCC		Client

### $\stackrel{\mathsf{WOODWARD-CLYDE}}{\cdot} \; \mathsf{CONSULTANTS}$

			Project	41069A
lient	BLM Rep	Kran	Date	14-78
ork Area _	Eastern Gulf of Mexico		Supervisor	Beer
m.i				
Time				
0000	Enroute to survey area		<del>, '                                   </del>	-
0940	Stop to test equipment, cali	brate fathometer		
1140	Enroute to survey area runni	ng at 7 kts. Wor	king problems out	of gear
1200	Enroute to survey area - Sky	clear - Seas cal	m .	
2400	Enroute to survey area - Sky	clear - Seas cal	m	
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		WCC	Clie	nt

					Project	41069A	
Client	BLM		Rep	Kran	Date	7-15-78	
Work Area	East	tern Gulf of	f Mexico		Supervis	or Beer	
Time							
0000		Enroute to sur	evey area	•			
0730		Arrive main pass block 289 to calibrate Hi-Fix at Shell platform 289B.					
		Platform does	not exist. S	hore stations not	up yet. Stan	ding by	
0900		Hi-Fix chain u	ıp. Attemptir	g to verify if Sh	ell 290B is in	deed	
		correct platfo	orm. Cannot b	oard rig due to a	dverse weather	- Winds 15-20	
		kts, sea state	e 2 - And curr	ents. Decca shor	e man is conta	cting Houston	
		for info if of	otainable (too	lay is Saturday)			
1030	-	No verification	on - Departing	for Pensacola Ba	y to calibrate	-	
		Weather pickir	ng up				
2000		Off Pensacola	at outer char	nel marker, proce	eding to calib	ration buoy	
2020		Off #6 channel buoy; light rain, lightning to West. Seas 2					
2037		Calibrate on i	#15 channel bu	ioy; Head for wor	k area		
2200		Enroute, rain	increasing			-	
2315		Arrive vicinit	ty of area #1.	to set nav refere	ence buoy. Rai	ning	
2330		Nav buoy over	side - Resett	ing necessary			
2355				with fathometer of	alibration and	laying gear	
				: -			
	_						

Client

Project 41069A

Client	BLM	Rep	Kran	Date	7-16-78
Work Area	Eastern Gulf	of Mexico		Superv	isor Beer
Time					
0000	Fathometer	calibration in p	progress. Sea	as 2, light rain,	moderate
	currents pr	ecluded bar ched	cks. Fathomet	er cal based on 1	ead
	line readir	ıgs .			
0030	Completed o	alibration w/set	t (inst) veloc	ity of 1420 m/set	- seems
	unreal, but	checks w/lead	line and line	out on nav buoy.	Depth 48'
0045	Seimsmic ge	ear over the side	e, final check	tout in progress	
0228	Begin Line	1-106, S.P3			
0514	End Line 1-	-106, S.P. 138			
0603	Begin Line	1-105, S.P. 138			
0853	End Line 1-	-105, S.P. 1			
0913	Begin Line	1-104, S.P. 1			
1111	End Line 1-	-104, S.P. 134			
1125	Begin Line	1-103, S.P. 134			
1155	Abort to wo	ork on 3.5 system	n, S.P. 116		
1435	Begin Line	1-103, S.P. 134			
1700	Break Line	1-103, S.P. 35	- Nav proble	ems - Returning to	buoy to recal
1800	Cannot loca	te ref. buoys.	Expect they w	vere picked up by	a private boat.
	(This is St	nday)	: 1		
1805	Returning t	o Pensacola to o	calibrate		
2100	Arrive at A	15 channel buoy	to calibrate	Nav. Sky scatter	ed clouds,
	winds 5-10	kts, Seas 1'-2'			
continue					

continued

## WOODWARD-CLYDE CONSULTANTS GEOMARINE FIELD LOG

Time 2155 Enroute to work area about 8 mi. out, Nav transmitter down about boat. Must return to Pensacola for recal, will repair enroute  2240 Arrive at #15 buoy. Transmitter repaired, which now requires a frequency shift in shore stations. Estimate 2 hours for shore personnel to drive to stations and complete tuning  2400 Standing by to calibrate Hi-Fix. Shore station frequencies addynation Bay calm, sky overcast 50%, extensive lightning activity to the	41069A
Time  2155 Enroute to work area about 8 mi. out, Nav transmitter down aboat boat. Must return to Pensacola for recal, will repair enroute  2240 Arrive at #15 buoy. Transmitter repaired, which now requires a frequency shift in shore stations. Estimate 2 hours for shore personnel to drive to stations and complete tuning  2400 Standing by to calibrate Hi-Fix. Shore station frequencies adjusted Bay calm, sky overcast 50%, extensive lightning activity to the	6-78
Enroute to work area about 8 mi. out, Nav transmitter down about boat. Must return to Pensacola for recal, will repair enroute  Arrive at \$15 buoy. Transmitter repaired, which now requires a frequency shift in shore stations. Estimate 2 hours for shore personnel to drive to stations and complete tuning  Standing by to calibrate Hi-Fix. Shore station frequencies adjust Bay calm, sky overcast 50%, extensive lightning activity to the	Beer
Enroute to work area about 8 mi. out, Nav transmitter down about boat. Must return to Pensacola for recal, will repair enroute  Arrive at #15 buoy. Transmitter repaired, which now requires a frequency shift in shore stations. Estimate 2 hours for shore personnel to drive to stations and complete tuning  Standing by to calibrate Hi-Fix. Shore station frequencies adjute Bay calm, sky overcast 50%, extensive lightning activity to the	
boat. Must return to Pensacola for recal, will repair enroute  Arrive at #15 buoy. Transmitter repaired, which now requires a frequency shift in shore stations. Estimate 2 hours for shore personnel to drive to stations and complete tuning  Standing by to calibrate Hi-Fix. Shore station frequencies adjusted by the station of the statio	
Arrive at #15 buoy. Transmitter repaired, which now requires a frequency shift in shore stations. Estimate 2 hours for shore personnel to drive to stations and complete tuning  2400 Standing by to calibrate Hi-Fix. Shore station frequencies adjuted Bay calm, sky overcast 50%, extensive lightning activity to the	rd
frequency shift in shore stations. Estimate 2 hours for shore personnel to drive to stations and complete tuning  2400 Standing by to calibrate Hi-Fix. Shore station frequencies adjuted Bay calm, sky overcast 50%, extensive lightning activity to the	
personnel to drive to stations and complete tuning  2400 Standing by to calibrate Hi-Fix. Shore station frequencies adjute Bay calm, sky overcast 50%, extensive lightning activity to the	
Standing by to calibrate Hi-Fix. Shore station frequencies adjute the Bay calm, sky overcast 50%, extensive lightning activity to the	
Bay calm, sky overcast 50%, extensive lightning activity to the	
	usted.
	West

Client

		•		Project _	41069A		
Client	BLM	Rep	Kran	Date	7-17-78		
Work Area	Eastern Gulf	of Mexico		Superviso	r Beer		
Time					•		
0000	Standing by	/ #15 buoy					
0010	Calibration complete, heading back to #1 work area						
0300	Arrive work	area #1. Cal.	. fathometer wit	h lead line. Deplo	y nav		
	reference b	ouoy					
0330	Deploy gear over side						
0352	Begin Line	1-103, S.P. 53	to complete	this line			
0455	End Line 1-	-103, S.P1					
0508	Begin Line	1-102, S.P1					
0700	Break Line	Break Line 1-102, S.P. 125, Nav problems. Recal on reference buoy					
0746	Continue Li	Continue Line 1-102, S.P. 123					
0756	End Line 1-	-102, S.P. 134	- Encountering	nav problems			
0915	Nav down. Repairs require equipment to be flown in from Houston.						
	Departing i	for Pensacola					
1400	Arrive city dock, Pensacola, ship's cook quit; one Decca navigator						
	quit. Repl	lacements will	arrive Tuesday	a.m. Decca nav equ	Ipment		
	will also h	be here by mid	a.m. Tuesday				
2400	Alongside o	city dock, Pens	acola				
		*	:		3 - 1		
,							

CC Client

Project 41069A

Client	BLM Rep Kran Date 7-18-78
Work Area	Eastern Gulf of Nexico Supervisor Beer
Time	
0000	Alongside city dock, Pensacola, crew ashore
1000	Replacement cook and navigator aboard. Nav crew must check gear.
	Replacement gear not yet here
1115	Replacement Decca gear arrived
1200	Nav system checked and ready
1300	Depart Pensacola dock
1345	Calibrate navigation at #15 buoy and head for work area
1620	Arrive at work area, run Lead Line
1640	All gear over the side. Begin checkout comparison of Klein system -
)	wet vs dry paper
1700	Checkout complete; steaming to start of Line
1750	Begin Line 1-101, S.P1
2036	End Line 1-101, S.P. 134
2106	Begin Line 1-208, S.P. 38
. 2335	End Line 1-208, S.P. 1 "- Sea state 2, Short chop boat rolling
	heavily, confused sea
2357	Begin Line 207, S.P. 1
2400	On Line 207 :
	vog Client

	•	Project	41069A
Client	BLM Rep Kran	Date 7-	19-78
Work Area	Eastern Gulf of Mexico	Supervisor	Beer
Time	• .		
0000	On Line 207		
0035	End Line 207, S.P. 39		
0105	Begin Line 206, S.P. 38		
0149 .	End Line 206, S.P. 1		
0218	Begin Line 205, S.P. 1		
0301	End Line 205, S.P. 38		
0350	Begin Line 204, S.P. 38		
0429	End Line 204, S.P. 1		
0456	Begin Line 203, S.P. 1		
0538	End Line 203, S.P. 38		
0605	Begin Line 202, S.P. 38		
0645	End Line 202, S.P. 1		
0706	Begin Line 201, S.P. 1		
0753	End Line 201, S.P. 38		
0832	Begin Line 106A, S.P. #1		
0852	Abort Line 106A, S.P. 8 - Nav problem	ems due to weather	
0910	Lost all nav due to weather - Heavy	rain passing	
1015	Seismic gear aboard, steaming to na	v reference buoy to the lan	e count. OK
1045	Depart buoy location for platform 2	89B, then to area #2 or #3.	
	Area #1 completed		
1830	Arrive Shell platform 289B to calib	rate Hi-Fix. Signals weak	
continue			

Client

### WOODWARD-CLYDE CONSULTANTS

#### GEOMARINE FIELD LOG

Project \_\_\_41069A

Client	BLM .	Rep	Kran	Date	7-19-78
Work Area	Eastern Gulf o	f Mexico		Super	visor Beer
Time					
2000	Standing off	289B. Signals	weak, Sky w	aves; Thunderh	eads and
	rain/lightnin	g storms above	10 miles off	, heading towar	d our location
2400	Standing by o	n weather			
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			W	cc	Client

		Project 41069A				
Client	BLM Rep Kran	Date 7-20-78				
Work Area	Eastern Gulf of Mexico	Supervisor Beer				
Time						
0000	Standing by on weather					
0800	Moving into deep water to check and cal Klei	n system in deep water,				
	and check EDO system. EDO fathometer usable only to 100 meters					
0900	Moving back to 289B to attempt nav cal. Sea	Moving back to 289B to attempt nav cal. Seas 2, Many rain squalls				
	in area '					
0950	Calibration run very bad, cannot use					
1130	Testing out Klein system	Testing out Klein system				
1200	Attempt Hi-Fix cal, rain squalls moving in from N.E. Cannot get cal					
1220	Set course for Pensacola/Mobile area. Seas and winds increasing					
1400	Past squall line, established contact w/Decca shoreman. Shore					
	stations off frequency. Reset stations and transmitter. Returning					
	to 289B to cal					
1545	Arrive main pass block 289B					
1620	Complete nav calibration. Winds 20-25 kts,	Seas 2, Skies 50% overcast				
	w/thunderheads					
1700	Leave 289B area, Nav checks ok. v/w on CSE	360 <sup>0</sup> T, Seas, 1'-2',				
	Chop, 5'-6' swell, Winds 30-40 kts. Boat rolling heavily					
1915	One shore station down. Continue present CS	E/SPD to maintain Lane count.				
	Station dead					
1935	Buoy over the side, standing by					
2105	Established contact with shoreman, who will	check on station				
continue		*				

### WOODWARD-CLYDE CONSULTANTS

Project 41069A

Client	BLM	Rep	Kran	Date _	7-20-78
Work Area	Eastern Gul	f of Mexico		Superv	isor Beer
Time					
2400	Standing	by reference buoy			
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			WO	cc	Client

				Project _	41069A	
Client	BLM	Rep	Kran	Date	7-21-78	
Work Area	Eastern Gulf	of Mexico		Superviso	r Beer	
Time					,	
0000	Standing by	reference buoy	y. Seas modera	ite, swell heavy, box	at rolling	
	badly. Squa	alls in area				
0115	Nav shore st	ation up. Sta	anding by refer	ence buoy to confirm	n Lane count	
0200 -	Lane count o	confirmed; lear	ving for Area 2	2		
0900	Arrive Area	2. Deploy gea	ar and check.	Seas 5'-6', Winds 20	)-25 kts,	
	Squalls scat	tered through	out area, prima	arily N.E.		
0922	Begin Line 2	2-112, S.P. 70	. Using multie	electrode sparker.	Seas too	
			_	chop on 5'-6' swell		
	Extensive th	understorm act	tivity to the N	North, affecting nav	Igation	
1027	End Line 2-1	112, S.P. 1				
1122		2-111, S.P. 1				
1246	End Line 2-111, S.P. 70					
1323	Begin Line 2-110, S.P. 70					
1419	End Line 2-110, S.P. 1					
1430		Soth channels	on turn. Squal	ll line North of the	location.	
				f Area 2 to locate re		
1-1-						
1745	Arrive vicin	nity of buoy u	sing marginal I	Loran navigation: L	oran signals	
	eratic. Hea	avy seas and d	ark clouds prev	vail	<u> </u>	
1825	Unable to lo	cate reference	e buoy; Depart	ting for Pensacola.	Require	
	calibration	on #15 buoy	*			
2320	Arrive #15 }	ouoy; proceed	ing on into por	rt ·		
continue						

Client

continued

### WOODWARD-CLYDE CONSULTANTS

	·		Project	41069A
Client	.BLM Rep	Kran	Date7-	21-78
Work Area	Eastern Gulf of Mexico		Supervisor	
Time				
2400	Underway to City Dock			
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	•	Project 41069A					
Client	BLM Rep None	Date 7-22-78					
Work Area	Eastern Gulf of Mexico	Supervisor Beer					
Time		•					
0000	Underway to Pensacola City Dock						
0100	Arrive City Dock						
. 0800	Contact Orange						
0900	Contact Decca shoreman (wait). Discussed po	ssibility of moving one					
	shore station. Also checking nav gear aboard for problems						
1030	Thunderstorms moving in from South. Heavy r	ain beginning. Bay water					
	standing on end! Winds 25-30 kts. Ship's cook quit. BLM rep						
	departed for New York. WCC asst. interpretor put ashore to work on						
174	beach						
1200	Purchasing supplies, etc. in town						
2400	Standing by City Dock. Have hired cook and messman, taken on lube oil,						
	presently taking on water. No fuel available till Monday a.m. All						
	systems ready, waiting on water tanks to be	filled. Will sail at sunrise					
	·						
	WCC	Client					

410694

				Project					
Client	BLM	Rep _	None	Date	7-23-78				
Work Area	Eastern Gu	lf of Mexico	Supervi	sor Beer					
Time									
0000	Standing by City Dock								
0600	Depart City	Depart City Dock							
0645	Arrive #15 b	Arrive #15 buoy, calibrate navigation system							
1210	Arrive Area	Arrive Area #2							
1220	Drop nav ref	erence buoy, w	ith light and ra	dar reflector					
1245	Calibrate de	pth recorder w	rith lead line -	ok					
1300	Navigation down to weather. Heavy squalls moving into area. Extensive								
	water leakage in boat. Heavy in instrument room, some in living quarters,								
	some in nav	area of bridge	. Instrument ar	ea tarped over	to prevent damage				
1405	Rain ceases, waiting for electrical storm interference to dissipate so								
	we can re-es	stablish lane c	ount		4				
1415	Standing of	reference buc	ру						
1430	Lost sight o	of buoy in heav	y seas. Unable	to get I.D. on	radar				
1500	Sighted refe	erence buoy							
1508	Established	lane count							
1515 .	Seismic gear	r over the side	e, Seas still ve	ery rough, 5'-6'	, Boat				
	rolling hear	vily							
1545	Lost nav si	gnals due to he	eavy squall acity	rity, just prio	r to starting line				
1550	Pick up sei	smîc gear. Wea	ather worsening						
1700		navigation							
1730	Stream seis	mic gear	-,						
continue									
			*****		Client				

				Project	41069A
Client	BLM	Rep	None	Date	7-23-78
Work Area	Eastern Gul	lf of Mexico		Supervis	or Beer
Time					
1742	Start Line 2	-109			
1745	Abort Line 2	-109, navigatio	on down to weath	er, gear aboard	
1915	Establish na	vigation			
1930	Stream seism	ic gear			
1941	Start Line 2	-109, S.P. 70			
2103	End Line 2-1	09, S.P. 1			
2120	Start Line 2	-108, S.P. 1			
2248	End Line 2-1	08, S.P. 70			
2312	Start Line 2	-107, S.P. 70			
2400	On Line 2-10	7			
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Project 41069A

Date \_\_\_\_\_7-24-78

#### GEOMARINE FIELD LOG

Rep None

Client BLM

Work Area _	Eastern Gulf of Mexico Supervisor Beer
Time	
0000	On Line 2-107
0021	End Line 2-107, S.P. 1
0150	Start Line 2-106, S.P. 1
0324	End Line 2-106, S.P. 70
0336	Start Line 2-105, Nav down, thunderstorms throughout area
0426	Restart Line 2-105, S.P. 70
0529	End Line 2-105, S.P. 1
0551	Start Line 2-104, S.P. 1
. 0727	End Line 2-104, S.P. 70
0732	Start Line 2-103, S.P. 70
0827	Break Line 2-103, S.P. 20, nav down to weather. Heavy thunderstorm
	activity, rain. Bad weather with rain squalls and extensive
	thunderstorms throughout the afternoon. Standing off reference buoy
1645 .	Navigation established
1700	Seismic gear over the side
1717	Start Line 2-103, S.P. 30
1749	End Line 2-103, S.P. 1
1838	Start Line 2-102, S.P. 1
1944	End Line 2-102, S.P. 70
2002	Start Line 2-101, S.P. 70
2103	End Line 2-101, S.P. 1
continue	
	WCCClient

				Project	41069A
Client	BLM	Rep	None	Date 7-	24-78
	Eastern Gulf	of Mexico		Supervisor	
Time					
2151	Start Line 2-2	01, S.P. 70			
2248	End Line 2-201	, s.p. 1			
2315	Start Line 2-2	02, S.P. 1			
2400	On Line 2-202,	S.P. 45			
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Client

Project \_\_\_\_41069A

Client	BLM Rep None Date	7-25-78
Work Area _	Eastern Gulf of Mexico Superviso	r Beer
Time		
1802	End Line 3-111, S.P. 70	
1817	Start Line 3-110, S.P. 70	
1940	End Line 3-110, S.P. 1	
2009	Start Line 3-109, S.P. 1	
2116	End Line 3-109, S.P. 70	
2138	Start Line 3-108, S.P. 70	
2248	End Line 3-108, S.P. 1	
2306	Start Line 3-107, S.P. 1	
2335	Abort Line 3-107, S.P. 20; lost navigation signals	
2345	Pull in gear, weather picking up. Lightning to West. Heads	ing
2400	Enroute to MP-254A	

		Project 41069A
Client	BLM Rep None	Date 7-25-78
Nork Area	Eastern Culf of Mexico	Supervisor Beer
Time	*	•
0000	On Line 2-202	
0026	End Line 2-202, S.P. 70	
0050	Start Line 2-203, S.P. 70	-
0149	End Line 2-203, S.P. 1	•,
0215	Start Line 2-204, S.P. 1	
0322	End Line 2-204, S.P. 70	
0340	Gear aboard. Squalls throught area, interm	ittent rain
0435	Arrive at Nav reference buoy to check lane	count - ok
0445	Very heavy rain and thunderstorm activity.	Nav down to weather.
	Standing off buoy	
0900	Recal nav on buoy; depart for Area 3	
1100	Arrive vicinity of area. Cannot lead line	(too deep), EDO depth sounder
	down. Depth readings taken with sparker on	E.P.C. EDO recorder
	officially dead. Water too deep and drifti	ng too fast to set buoy.
	Waves 4'-5', some rain. Heading for platfo	rm S.W. of Block 573
	to the navigation for reference	
1300	Arrive Chevron platform MP-254A, Calibrate	for navigation reference
1330	Stream gear, heading onto line	
1426	Start Line 3-112, S.P. 70	
1633	End Line 3-112, S.P. 1	
1657	Start Line 3-111, S.P. 1	
continue		
		63.1

Project 41069A

#### GEOMARINE FIELD LOG

● Client BLM Rep None Date 7-26-78

Work Area _	Eastern Gulf of Mexico	Supervisor Beer			
Time		•			
0000	Enroute to MP-254A				
0100	Standing off Mp-254A, waiting for weath	er to improve. Navigation			
	down to weather. Increasing squall and	thunderstorm activity			
	to the West				
1200	Rain, light to very heavy, intermitent throughout the night.				
	Extensive thunderstorm activity. Prese	ntly raining. Seas calm,			
	Winds 10-15 kts				
1415	Acquire nav signals, still raining ligh	itly			
1430	Confirm lane count at platform MP-254A;	underway to pick up Line.			
	Stream gear				
1536	Start Line 3-107, S.P. 70				
1641	End Line 3-107, S.P. 1				
1718	Start Line 3-201, S.P. 33				
1757 .	End Line 3-201, S.P. 70				
1820	Start Line 3-202, S.P. 70°				
1853	End Line 3-202, S.P. 33				
1953	Start Line 3-106, S.P. 33				
2142	End Line 3-106, S.P. 134				
2229	Start Line 3-105, S.P. 134				
2359	End Line 3-105, S.P. 33				
		<u> </u>			
	. w	CC Client			

				Project	41069A	
Client	BLM	Rep	None	Date	7-27-78	
Work Area _	Eastern Gu	lf of Mexico		Supervisor	Beer	
Time	Leading out	of Line 3-105				
0045	Thunderstorn	ns and squalls	in area, nav s	ignals bad. Leaving	for	
	reference pl	latform to chec	k lane count.	Gear aboard .		
0220	Acquired lan	ne count at pla	tform			
0240	Depart for w	vork area				
0310	Frequent squalls, rain moderate to heavy; signals bad; but holding					
	lane count					
0354	Nav down - lost lane count; heavy squall activity; Seas 5'-6';					
	Boat rolling	g heavily				
0700	Decca's SSB radio out. Heading North to establish communication via					
	VHF radio.	Raining hard				
0900	Signals acquired; Stations unknown since third shore station added					
	to chain too	lay. No commun	ications w/shor	е		
1030	Contacted De	ecca/Houston				
1130	Contacted WC	CC/Orange				
1145	Proceeding to Pensacola to replace communications radio; Fuel/water					
	ship; Drop off data, etc. Rain continues					
1600	Arrive City	Dock, Pensacol	La ·			
1700	Decca radio	replaced. Rec	eived ok to pro	ceed to Area #4. A	waiting	
	fuel and ra	adar repair :				

Client

continue

				Project	41069A
Client	BLM	Rep	None	Date 7-	27-78
Work Area _	Eastern Gu	lf of Mexico		Supervisor	Beer
Time					
					:
1800	Kadar repair	and fuel unavai.	lable till Frida	y a.m. Boat will	not
	sail without	radar			
2400	Alongside Ci	ty Dock, Pensacol	la		
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Project \_\_\_41069A

Client	BLM	Rep	Dewald	Date	7-28-78
Work Area	Eastern Gu	f of Mexico		Supervi	sor Beer
Time					
0000	Alongside	City Dock, Pens	acola		
1430	Radar repa	ir completed			· · · · · · · · · · · · · · · · · · ·
1700	Fuel truck	arrives			
1800	All provis	ions aboard			
1845	Fueling co	mpleted			
1915	Depart Per	sacola dock			
2005	Calibrate	navigation on #.	15 buoy, enroute	to Area 4	
2400	Enroute to	Area #4			
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	1.00	<u> </u>			
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					T 1 1828
Note: Inter (BLM	mittent heavy r	ain from 0000 to	o about 1300 WCC		Client

Project 41069A

Client	BLM Rep Dewald Date 7-29-78
Work Area	Eastern Gulf of Mexico Supervisor Beer
Time	
0000	Enroute to Area #4
0600	Arrive Area 4, preparing navigation reference buoy
0830	Navigation reference buoy launched and secured following three
	attempts. Heavy currents
0840	Establish lane count at ref buoy location
0943	Start Line 4-113, S.P. 33
1025	End Line 4-113, S.P. 1
1107	Start Line 4-114, S.P. 1
1139	End Line 4-114, S.P. 38
1200	Nav down; repairing digitizer
1500	Digitizer repaired
1511	Start Line 4-115, S.P. 38 - Skies clear, Winds 15-20 kts, Swells 3'-4'
1600	End Line 4-115, S.P. 1
1614	Start Line 4-116, S.P. 1
1654	End Line 4-116, S.P. 38
1713	Start Line 4-117, S.P. 38
1723	Abort Line 4-4-117, S.P. 28 - Navigation problems
1805	Continue Line 4-117, S.P. 32
1834	End Line 4-117, S.P. 1
1917	Start Line 4-118, S.P. 1
. 2001	End Line 4-118
continue	
	WCC Client

		Project41069A				
Client	BLM Rep Dewald	Date 7-29-78				
Work Area	Eastern Gulf of Mexico	Supervisor Beer				
Time						
2010	Standing by survey area while nav plot	e Area A preplote				
		s Area 4 preprocs				
	*(See Note below)					
2215	Preplot completed; Heading for Line					
2230	Digitizer problems; Circling					
2345	Problem corrected; Heading for Line					
2400	Coming onto Line					
	*Note: Nav computer terminal printer n	not functioning. Running this area				
	in manual nav mode till replacement to	erminal is sent down. Plotter and				
	Redbird appear to function correctly.	Assuming data onto tape is valid.				
	Cannot verify till replacement printer is installed. Will continue with					
	Area 4 work on assumption data on tape	e is valid.				
	***					
		roo Client				

		Project	41069A				
Client	BLM Rep Dewald	Date7	-30-78				
Work Area .	Eastern Gulf of Mexico	Supervisor	Beer				
Time							
0000	Heading onto Line						
0009	Start Line 4-112, S.P. 1	-					
0230	End Line 4-112, S.P. 102		·····				
0301	Start Line 4-111, S.P. 102						
		n Roat rolling Annear	e to bo				
0531		End Line 4-111, S.P. 1; Seas 4' Chop, Boat rolling. Appears to be a strong current running crabbing 15 <sup>0</sup> off Line heading to stay on					
	Line. (Steering 345 <sup>0</sup> to run Line 36						
0551	Start Line 4-110, S.P. 1						
0728	End Line 4-110, S.P. 102						
0821	Start Line 4-109, S.P. 102						
0900	Abort Line 4-109, S.P. 80. Navigati	on problems					
0943	Pick up Line 4-109, S.P. 85						
1134	End Line 4-109, S.P. 1						
1145	Gear on board						
1210	Tie lane count at navigation referen	ace buoy, ok	٠				
1215	Depart Area #4 for Panama City to pick up navigation system.						
	Replacement computer terminal						
1730	Arrive dock in Panama City; exchang	ge terminals and check out	unit.				
	Print head on replacement bad						
1830	Terminal repaired. Weather picking	up rapidly. Winds 35-40	kts.				
	Depart dock with some difficulty due	e to onshore winds					
continue		wcc cli	ent				

					110)600	41069A
Client	BLM	Rep	Dew.	ald	Date	7-30-78
Work Area	Eastern G	alf of Mexic	0		Supervi	sor Beer
Time						
1915	Calibrat	e navigation o	n outer ch	annel buoy	. Weather worse	ening.
	Enroute	to Area #4				
2130	Lost lan	e count due to	severe th	ınderstorm	activity. Ligh	ntning
	and inte	rmittent heavy	rain pred	ominate.	Ship rolling vi	olently
2345	Arrive A	rea #4 in vici	nity of na	vigation r	eference buoy.	Proceeding
,	search f	or buoy to est	ablish lan	e count		
2400 .	Searchin	g for buoy				
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				1200		Client

Project 41069A

rk Area _	Eastern Gulf of Mexico Supervisor Beer
Time	•
0000	Searching for nav reference buoy
0045	Violent rolling due to high seas. 12 VDC wet-cell batteries for
	Hi-Fix system broke loose from mounts. One thrown down to deck below.
	Nav system dead (short-term internal supply maintains hundredths cal)
	Lost lane count. Doubtful if lane count reference buoy can be found
	before daylight. Loran signals bad due to storm
0630	Sighted nav reference buoy
0645	Lane count established. During process, buoy snagged. Buoy reset and
1.41	position marked. Standing by in vicinity of ref buoy till squalls in
	area clear. Rain intermittent, light to heavy
0745	Stream seismic gear
0800	Nav computer problems; standing by
0921	Start Line 4-108
1037	End Line 4-108. Seas calming down. Sun shining
1110	Start Line 4-107, S.P. 102
1303	End Line 4-107, S.P. 1
1346	Start Line 4-106, S.P. 33
1350	Abort Line 4-106, S.P. 37; Lost nav signals. Pick up gear and head for
	reference buoy. Raining heavily
1520	arrive buoy location. Spar buoy gone, styrofoam subfloats remain.
	Establish lane count
continue	
	WCC Client

		Project	41069A
Client	BLM Rep Dewald	Date 7-	-31-78
Work Area	Eastern Gulf of Mexico	Supervisor	Beer
Time			
1540	Set another buoy and check lane count		
1600	Depart for work area		
1700	Stream seismic gear		
1710	Start Line 4-106, S.P. 33		
1829	End Line 4-106, S.P. 102. Heavy swells. Box	at rolling	
1845	Start Line 4-105, S.P. 102		
1955	End Line 4-105, S.P. 33		
2042	Start Line 4-104, S.P. 33		
2143 2200	End Line 4-104, S.P. 102 Start Line 4-103, S.P. 102		
2313	End Line 4-103, S.P. 33		
2334	Start Line 4-102, S.P. 33		
2400	On Line 4-102		
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Project 41069A

Client	BLM	Rep	Dewald	Date	8-01-78
		ılf of Nexico		Supervi	sor Beer
Time	0.71	. 100			
0000	On Line				
0045	End Line	4-102			
0100	Start Li	ne 4-101, S.P. 102			
0212	End Line	4-101, S.P. 33			•
0405	Start Lin	ne 4-201, S.P. 33			<u> </u>
0534	End Line	4-201, S.P. 102			
0554	Start Lin	ne 4-202, S.P. 102			
0655	End Line	4-202, S.P. 33			
0740	Start Li	ne 4-203, S.P. 1			
0901	End Line	4-203, S.P. 70			
0923	Start Li	ne 4-204, S.P. 70			
1027	End Line	4-204, S.P. 1			
1053	Start Li	ne 4-205, S.P. 1			
1210	End Line	4-205, S.P. 70			
1252	Start Li	ne 4-206, S.P. 70°			٠.
1401	End Line	4-206, S.P. 1			
1415	Pull in	seismic gear, head	for lane count bu	юу	
1500	Arrive n	av reference buoy.	Tie lane count.	Recover buoy	
1515	Depart A	rea #4 for Crystal	River. Shore nav	rigation chain	being moved to
	vicinity	of Area #5. Expe	cted arrival 0937,	Wednesday	
2400	Enroute	to Area #5 via nav	cal buoy off Crys	stal River	
	•		WCC		Client

				Project41069A
Client	BLM	Rep	Dewald	Date 8-02-78
Work Area	Eastern Gulf	of Mexico		Supervisor Beer
Time				
0000	Enroute to	Area #5. Seas	calm; Sky clear.	Lightning and cloud
	buildup on	eastern horizo	n	
0938	Arrive With	lacoochee Rive	r Entrance Buoy #1 f	or nav calibration.
	Both statio	ns up, signal	s strong. Weather g	ood. Incorrect coordinates
	given (wron	g zone); stan	ding by buoy waiting	info from Decca in
	Houston			
1215	Data arrive	d. Completed	nav calibration. En	route to work area
1515	Arrive Area	#5 work area		
1525	Drop nav la	ne count refer	ence buoy; lead lin	e depth check
1535	Stream seis	mic gear. Sea	s calm 1'-2', Sky c	lear, Winds 10-15 kts
1607	Start Line	5-201, S.P. 33		
1714	End Line 5-	201, S.P. 102		
1723	Start Line	5-202, S.P. 10	2	
1831	End Line 5-	202, S.P. 33		
1840	Start Line	5-203, S.P. 33		
1943	End Line 5-	203, S.P. 102		
1953	Start Line	5-204, S.P. 10	2	
2102	End Line 5-	204, S.P. 33		
2105	Head for re	ference buoy t	o check lane count -	ok ·
2222	Start Line	5-205, S.P. 33		
2326	End Line 5-	205, S.P. 102		
				•

continue

● Client

### WOODWARD-CLYDE CONSULTANTS

#### GEOMARINE FIELD LOG

Project 41069A

Client	BLM	Rep_	Dewald	Date	3-02-78
Work Area	Eastern Gulf o	f Mexico		Supervisor	
Time					
2357	Start Line 5-2	206, S.P. 102	2		
2400	On Line 5-206				
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			WCC	Cli	ient

						Project	410	069A
Client	BLM	R	ер	Dewald		Date	8-03-78	
Work Area	Eastern Gul	f of Mex	ico			Superviso	or Be	2 r
Time				٠				
0000	On Line 5-	206						-
0100	End Line 5	-206, S.P.	33					
0144	Start Line	5-207, S.I	2. 1					
0321	End Line 5	-207, S.P.	102					
0333	Start Line	5-208, S.J	. 102				-	
0408	Break Line	s-208, S.P	. 67;	Malfunction	in 255 se	eismic record	ler	
0,438	Continue I	ine 5-208,	S.P.	80				
0553	End Line 5	-208, S.P.	1					
0627	Start Line	5-209, S.	P. 1					
0803	End Line 5	-209, S.P.	102					
0815	Start Line	5-210, S.	P. 102					
0944	End Line 5	-210, S.P.	1					
1007	Start Line	5-211, S.	P. 1					
1139	End Line 5	5-211, S.P.	102					
1150	Start Line	5-212, S.	P. 102				٠.	
1334	End Line	5-212, S.P.	1 .					
1359	Start Line	5-106, S.	P. 70					
1426	Enď Line	5-106, S.P.	33	:				
1507	Start Line	≥ 5-105, S.	P. 33					
1545	End Line	5-105, S.P.	70 :					
1605	Start Line	e 5-104, S.	P. 70				. `	
continue								

Client

● Client BLM Rep Dewald

Work Area Eastern Gulf of Mexico

#### GEOMARINE FIELD LOG

Project \_\_\_41069A

Date \_\_\_\_8-03-78 Supervisor Beer

Time	
1712	End Line 5-104, S.P. 1
1735	Start Line 5-103, S.P. 1
1841	End Line 5-103, S.P. 70
1859	Start Line 5-102, S.P. 70
1955	End Line 5-102, S.P. 1
2013	Start Line 5-101, S.P. 1
2119	End Line 5-101, S.P. 1
2154	Start dry paper test run S-208, S.P. 70. Retrieve gear
2210	End test run S-208, S.P. 50 - Head for lane count buoy
2330	Check lane count - ok. Retrieve buoy
2345	Leave for Tampa, St. Petersburg
2400	In transit
	×
	WCC Client

			Project _	41069A
Time  0000 Enroute to Tampa, St. Petersburg. Navigation shore stations being  moved to southern locations  0800 Arrive outer harbor area  1030 Alongside commercial dock in Manatee  (Switch from Houston to Tampa time)  1800 Food and water aboard. Unable to depart till proper nav coordinates  are available. Original buoy to be used no longer in the channel.  Will use another cal point. Waiting for coordinates to be telephoned  from Decca in Houston  1900 Navigation cal point coordinates arrive  1930 Slave station #1 down. No navigation  2400 Waiting for Slave #1 to be repaired	Client	BLM Rep Dewald	Date8	-04-78
moved to Southern locations  Arrive outer harbor area  1030 Alongside commercial dock in Manatee (Switch from Houston to Tampa time)  1800 Food and water aboard. Unable to depart till proper nav coordinates are available. Original buoy to be used no longer in the channel.  Will use another cal point. Waiting for coordinates to be telephoned from Decca in Houston  1900 Navigation cal point coordinates arrive  1930 Slave station #1 down. No navigation  2400 Waiting for Slave #1 to be repaired	Work Area	Eastern Gulf. of Mexico	Supervisor	Beer
moved to Southern locations  Arrive outer harbor area  1030 Alongside commercial dock in Manatee (Switch from Houston to Tampa time)  1800 Food and water aboard. Unable to depart till proper nav coordinates are available. Original buoy to be used no longer in the channel.  Will use another cal point. Waiting for coordinates to be telephoned from Decca in Houston  1900 Navigation cal point coordinates arrive  1930 Slave station #1 down. No navigation  2400 Waiting for Slave #1 to be repaired				
moved to southern locations  Arrive outer harbor area  Alongside commercial dock in Manatee (Switch from Houston to Tampa time)  1800 Food and water aboard. Unable to depart till proper nav coordinates are available. Original buoy to be used no longer in the channel.  Will use another cal point. Waiting for coordinates to be telephoned from Decca in Houston  1900 Navigation cal point coordinates arrive  1930 Slave station #1 down. No navigation  2400 Waiting for Slave #1 to be repaired	Time			
Arrive outer harbor area  1030 Alongside commercial dock in Manatee  (Switch from Houston to Tampa time)  1800 Food and water aboard. Unable to depart till proper nav coordinates are available. Original buoy to be used no longer in the channel.  Will use another cal point. Waiting for coordinates to be telephoned from Decca in Houston  1900 Navigation cal point coordinates arrive  1930 Slave station #1 down. No navigation  2400 Waiting for Slave #1 to be repaired	0000	Enroute to Tampa, St. Petersburg. Navigat	ion shore stations	being
Alongside commercial dock in Manatee  (Switch from Houston to Tampa time)  1800 Food and water aboard. Unable to depart till proper nav coordinates are available. Original buoy to be used no longer in the channel.  Will use another cal point. Waiting for coordinates to be telephoned from Decca in Houston  1900 Navigation cal point coordinates arrive  1930 Slave station #1 down. No navigation  2400 Waiting for Slave #1 to be repaired		moved to southern locations		
(Switch from Houston to Tampa time)  1800 Food and water aboard. Unable to depart till proper nav coordinates are available. Original buoy to be used no longer in the channel.  Will use another cal point. Waiting for coordinates to be telephoned from Decca in Houston  1900 Navigation cal point coordinates arrive  1930 Slave station #1 down. No navigation  2400 Waiting for Slave #1 to be repaired	0800	Arrive outer harbor area		
Food and water aboard. Unable to depart till proper nav coordinates are available. Original buoy to be used no longer in the channel.  Will use another cal point. Waiting for coordinates to be telephoned from Decca in Houston  Navigation cal point coordinates arrive  Slave station #1 down. No navigation  Waiting for Slave #1 to be repaired	1030	Alongside commercial dock in Manatee		
are available. Original buoy to be used no longer in the channel.  Will use another cal point. Waiting for coordinates to be telephoned  from Decca in Houston  1900 Navigation cal point coordinates arrive  1930 Slave station #1 down. No navigation  2400 Waiting for Slave #1 to be repaired	(Switch from	Houston to Tampa time)		
Will use another cal point. Waiting for coordinates to be telephoned from Decca in Houston  Navigation cal point coordinates arrive  1930 Slave station #1 down. No navigation  2400 Waiting for Slave #1 to be repaired	1800	Food and water aboard. Unable to depart t	ill proper nav coor	dinates
from Decca in Houston  1900 Navigation cal point coordinates arrive  1930 Slave station #1 down. No navigation  2400 Waiting for Slave #1 to be repaired		are available. Original buoy to be used n	o longer in the cha	nnel.
1930 Navigation cal point coordinates arrive  1930 Slave station #1 down. No navigation  2400 Waiting for Slave #1 to be repaired		Will use another cal point. Waiting for c	oordinates to be te	lephoned
1930 Slave station #1 down. No navigation 2400 Waiting for Slave #1 to be repaired		from Decca in Houston		
2400 Waiting for Slave #1 to be repaired	1900	Navigation cal point coordinates arrive		
	1930	Slave station #1 down. No navigation		
	2400	Waiting for Slave #1 to be repaired		
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Client

Project 41069A

Supervisor Beer

#### GEOMARINE FIELD LOG

● Client BLM Rep Dewald Date 8-05-78

Work Area .	Eastern Gulf of Mexico	Supervisor Beer
Time		
0000	Waiting for navigation shore station to be	repaired
0400	Station #1 up	
0510	Depart dock, Port Manatee	
0650	Calibrate navigation at old Quarantine Pier	Light. Leave for
	Area #6	
1210	Navigation Station #1 down. Drop buoy and	circle area
1405	Nav station #1 up. Check lane count; cont	inue to Area #6
1640	Arrive Work Area #6	
1645	Lane count buoy over the side	
1710	Establish lane count on calibration buoy	
1715	Begin fathometer calibration on Raytheon as	nd EDO units
1745	Lay gear. Weather clear and sunny, sea s	tate 2, winds 5-10 kts
1759	Start Line 6A-101, S.P. 38	
1835	End Line 6A-101, S.P. 1	
1855	Start Line 6A-102, S.P. 1	•
1915	Abort Line 6A-102, S.P. 14. Excessive cab	le noise on sidescan records
2030	Restart 6A-102, S.P. 1	
2105	End Line 6A-102, S.P. 38	
2146	Start Line 6A-206, S.P. 1	
2150	Abort Line 6A-206, S.P. 4. Lost lane coun	t. Weather vicinity Sta 2
:		
continue		
	WCC	Client

		Project 41069A
Client	BLM Rep Dewald	Date 8-05-78
Work Area .	Eastern Gulf of Mexico	Supervisor Beer
m		
Time		
2200	Gear aboard. Heading to nav calibration (la	
	on side scan during this time. Problem in o	cable junction on fish
	towing bridal	
2315	Establish lane count at buoy	
2400	Enroute to work area. Severe thunderstorm a	activity in vicinity of
	Station #2, Charlotte Harbor, from tropical	low off Florida Keys
		Sit

				Project	410	59A
Client	BLM	Rep	Dewald	Date	8-06-78	
Work Area	Eastern Gu	1f of Mexico		Supervi	sor Bee	r
Time						
0000	Enroute t	o Area 6A				
0035	Seismic g	ear over the side			· · · · · · · · · · · · · · · · · · ·	
0046	Start Lir	e 6A-206, S.p. 37				
0124	End Line	6A-206, S.P. 1				
0136	Start Lin	e 6A-205, S.P. 1	-			
0214	End Line	6A-205, S.P. 38			1	
0226	Start Lir	e 6A-204, S.P. 38				
0309	End Line	6A-204, S.P. 1				
0320	Start Lir	e 6A-203, S.P. 1				
0355	End Line	6A-203, S.P. 38				
0408	Start Lir	ne 6A-202, S.P. 38				
0450	End Line	6A-202, S.P. 1				
0501	Start Lir	ne 6A-201, S.P. 1				
0534	End Line	6A-201, S.P. 38				
0601	Start Liz	ne 6B-102, S.P. 1				
0651	End Line	6B-102, S.P. 38				
0705	Nav down	lost lane count.	Continued bad	weather in area	of Station	2.
	Station	lown		1		
0805	Pick up	seismic gear. Dep	art for lane co	ount buoy .		
0915	Nav up.	Establish lane co	unt and return	to Area 6B		
1030	Lay seis	nic gear				
continue						

				Project	41069A
Client	BLM	Rep	Dewald	Date	8-06-78
Work Area	Eastern Gulf	of Mexico		Supervis	or Beer
Time					
1047	Start Line 6	B-101, S.P. 1			
1123	End Line 6B-	101, S.P. 38	-		
1148	Start Line 6	B-206, S.P. 38			
1223	End Line 6B-	206, S.P. 1		-	
1235	Start Line 6	B-205, S.P. 1			
1314	End Line 6B-	205, S.P. 38			
1345	Start Line 6	B-204, S.P. 38			
1424	End Line 6B-	204, S.P. 1			,
1455	Start Line 6	B-203, S.P. 1			
1538	End Line 6B-	203, S.P. 38.	Wind and seas	picking up. Many	thunderstorms
	visible in a	rea. Intermit	tent rain, mode	rate to heavy	
1549	Start Line 6	B-202, S.P. 38	· · · · · · · · · · · · · · · · · · ·		,:
1625	End Line 6B-	202, S.P. 1			
1647	Start Line 6	B-201, S.P. 1			
1729	End Line 6B-	201, S.P. 38.	Storms past; s	eas calm. Pull g	ear.
1830	Tie lane cou	nt and retriev	e buoy		
2005	Set lane cou	nt reference b	uoy for Areas 6	C and 7. Seas bu	ilding.
	Winds increa	sing. Overcas	t.		
2115	Stream seism	ic gear			
2129	Start Line 6	C-206, S.P. 1			s, [s
2245	End Line 6C-	206, S.P. 70			
continue					

		Project 41069A
	BLM Rep Dewald	Date 8-06-78
Work Area .	Eastern Gulf of Mexico	Supervisor Beer
Time		
2301	Start Line 6C-205, S.P. 70	
2400	On Line 6C-205	
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	Arra di La	
		Client

				Project	41069A
Client	BLM	Rep	Dewald	Date	8-07-78
Work Area	Eastern Gu	lf of Mexico		Supervis	or Beer
Time					
0000	On line 6	C-205			
0006	End line	6C-205, S.P. 1		-	
0019	Start lir	e 6C-204, S.P.	1		
0131 -	End line	6C-204, S.P. 70	0		
0145	Start lir	ne 6C-203, S.P.	70		
0317	End line	6C-203, S.P. 1	Seas 4' - 6',	winds 15-25 kts.	Thunderstorm
	activity	in allquadrants	s. Intermittent	rains. Boat roll	ing heavily
0330	Start lir	ne 6C-202, S.P.	1		
0434	End line	6C-202, S.P. 7	0		
0445	High seas	and very heav	y rain. Standin	g by. Violent rol	ling
0535	Start li	ne 6C-201, S.P.	70		
0723	End line	6C-201, S.P. 1	. Heavy rain con	ntinues. Seas 6'	- 7'. Cannot
	run nortl	n-south lines i	n area 6C. Depa	rting for 7.	
0730	Pull gear	aboard			
1010	Stream s	eismic gear, ar	ea 7		-1.
1022	Start li	ne 7-201, S.P.	1		
1134	End line	7-201, S.P. 70			
1155	Start li	ne 7-202, S.P.	1 .		
1304	End line	7-202, S.P. 1			
1316	Start li	ne 7-203, S.P.	1		
1435	End line	7-203, S.P. 70	. Seas 2'-3', w	rinds 20-25 kts. S	trong currents
continue					
			WC	c ·	Client

Project 41069A

Client	BLM	Rep Det	√a1d	Date 8-	-07-78
Work Area	Eastern Gulf of	Mexico		Supervisor	Beer
m/					
Time	Ot-ut 1:u- 7 20	d D 70			
1449	Start line 7-20				
1606	End line 7-204,			***************************************	· · · · · · · · · · · · · · · · · · ·
1647	Start line 7-20				
1810	End line 7-205,	S.P. 70			
1829	Start line 7-20	5, S.P. 70			<u> </u>
1942	End line 7-206,	S.P. 1			
1959	Start line 7-20	7, S.P. 1			
2111	End line 7-207,	S.P. 70			
2123	Start line 7-20	3, S.P. 70			
2235	End line 7-208,	s.P. 1			
2248	Start line 7-20	9, S.P. 1	,		
2400 .	On line 7-209				
		\$			
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			tice	Cli	ent

		Project	41069A
Client	BLM Rep Dewald	Date	8-08-78
Work Area	Eastern Gulf of Mexico	Supervisor	Beer
Time			
0000	On line 7-209		
0002	End line 7-209, S.P. 70		
0014	Start line 7-210, S.P. 70		
0140	End line 7-210, S.P. 1		
0153	Start line 7-211, S.P. 1		
0300	End line 7-211, S.P. 70		
0315	Start line 7-212, S.P. 70		
0452	End line 7-212, S.P. 1		
0540 -	Start line 7-104, S.P. 70	1	
0655	End line 7-104, S.P. 1		
0715	Start line 7-103, S.P. 1		
0833	End line 7-103, S.P. 70		
0852	Start line 7-102, S.P. 70		
. 0958	End line 7-102, S.P. 1		
1021	Start line 7-101, S.P. 1		
1139	End line 7-101, S.P. 70		
1145	Pull seismic gear, bar check raytheon fathomete	er ·	
1200	Depart for area 6C to run N-S tie lines		
1230	Tie land count to navigation Reference buoy	-	
1340	Stream seismic gear		
1357	Start line 6C-104, S.P. 38		.,
continue			
	WCC	Clie	ent

Client	77.11	Rep	Dewald	Project Date	41069A 8-08-78
Work Area	BLM Eastern Gulf o		Dewald	Supervisor	Beer
	Busicin ouil o	A HEALED		-	
Time					
1431	End line 6C-1	04, S.P. 1			
1455	Start line 60	-103, S.P. 1			
1548	End line 6C-1	03, S.P. 38			
1611	Start line 60	-102, S.P. 3	8		
1646	End line 6C-1	02, S.P. 1			
1710	Start line 6C	-101, S.P. 1			
1749	End line 6C-1	01, S.P. 38	Seas still 4'	-5' swell, winds 15-20	) kts. Heavy
	clouds on hor	izon - east.			
1810	Tie lane coun	t at nav ref	erence buoy and	depart for area 8.	
2130	Drop buoy at north end of area 8 and lane count. Seas building. Thunder-				
				ere storms in progress	
	of shore stat				
2210	Steam seismic	gear, weath	er calm, seas 2	'-3' sell. Moderate	to strong
	currents.				
2225	Start line 8-	101, S.P. 1			
2344	End line 8-10				
2400			scoverend error	in shooting of area	6A - tie
				data for areas 6-10 n	
	to boat in Ta				
		,			
			· NGC	Clie	

				Project	41069A
Client	BLM	Rep	Dewald	Date	8-09-78
Work Area	Eastern Gul	f of Mexico		Supervisor	Beer
Time					
0000	On line ch			1.	
0003	Start line	e 8-102, S.P.	70		
0100	Break line	e 8-102, S.P. 2	20, side scan down		
0230	Side scan	repaired			
0303		line 8-102, S.1	2, 24		
0330 0351	End line Start line	3-102, S.P. 1 e 8-103, S.P.	l		
0456	End line	3-103, S.P. 70			
0519	Start line	e 8-104, S.P.	70		
0633	End line	8-104, S.P. 1			
0658	Start line	e, 8-201, S.P.	1		
0756	End line,	8-201, S.P. 7	0		
0807	Start line	e, 8-202, S.P.	70		
0920	End line,	8-202, S.P. 1			
0935	Start line	e, 8-203, S.P.	1.		
1030	End line,	8-203, S.P. 7	0		
1043	Start line	e, 8-204, S.P.	70		
1152	End line,	8-204, S.P. 1			
1204	Start line	e, 8-205, S.P.	70		
1321	End line,	8-205, S.P. 7	0 .		
1342	Start line	e 8-206, S.P.	70.		
1502	End line	8-206, S.P. 1			
continue					
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		Project	41069A
Client	BLM Rep Dewald	Date	8-09-78
Work Area	Eastern Gulf of Mexico	Supervisor	Beer
Time			
1514	Start line 8-207, S.P. 1		
1626	End line 8-207, S.P. 70 Nav signals margin	nal due to extensi	ve thunder-
	storm activity. Several visible in area.	Standing by.	
1746	Start line 8-208, S.P. 1		
1908	End line 8-208, S.P. 70		
1915	Circling for radio call (cannot transmit wh	ile on line due to	navigation
	interfearance)		
1946	Start line 8-209, S.P. 70		
2048	End line 8-209, S.P. 1		
2050	Circling for radio call		
2147	Start line 8-210, S.P. 1		
2302	End line 8-210, S.P. 70		
2315	Start line 8-211, S.P. 70		
2400	On line 8-211		
		-	
			1
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				Project	41069A
Client	BLM	Rep_	Dewald	Date	8-10-78
Work Area	Eastern Gul	f of Mexico		Supervis	or Beer
Time					
0000	On line 8	-211			
0015	End line	8-211, S.P. 1			
0026	Start line	e 8-212, S.P. 1			
0139	End line	8-212, S.P. 70			
0150	Pull in s	eismic gear			
0155	Bar check				
0230	Tie land	count at naviga	tion reference	buoy and depart for	c Cal point -
	old quara	ntine pier ligh	t at entrance	to Tampa Bay	
0940	Tie lane	count at old qu	arantine pier	light	
1000	Small boa	t alongside to	offload data		
1100	Car nav s	ystem at old qu	arantine pier	light and depart fo	r Area #9
1815	Arrived A	rea #9			
1830	Nav lane	count buoy over	the side, pro	ceeding with fathom	eter calibrations.
1915	Underway	to first line			
2028	Start lin	e 9-201, S.P. 1	•		
2213	End line	9-201, S.P. 102			
2224	Start lin	e 9-202, S.P. 1	02		·
2400	On line 9	-202			<u> </u>

Client

### GEOMARINE FIELD LOG

				Project _	41069A
Client	BLM		Dewald	_ Date	08-11-78
Work Area	Eastern Gi	ılf of Mexico		Supervisor	Beer
Time					
0000	On line	9-202			
0007	End line	9-202, S.P. 1			
0021	Start li	ine 9-203, S.P. 1			
0208	End line	9-203, S.P. 102			
0221	Start li	ine 9-204, S.P. 102	•		
0405	End line	e 9-204, S.P. 1			
0417	Start li	ine 9-205, S.P. 1			
0601	End line	9-205, S.P. 102			
0612	Start li	ine 9-206, S.P. 102			
0759	End line	9-206, S.P. 1			
0800	Storms i	in area, occasional r	ain. Seas 3'-4'	, winds 10-15 km	ots. Sky 100
	overcast	. Standing by til s	torms pass.		
0943	Start li	ine 9-106, S.P. 38			
1019	End line	9-106, S.P. 1			
1037	Start li	ine 9-105, S.P. 1			
1117	End line	9-105, S.P. 38			
1130	Start li	ine 9-207, S.P. 33			
1235	End line	9-207, S.P. 102			
1251	Start li	ine 9-208, S.P. 102	1		
1413	End line	9-208, S.P. 33			
1533	Start li	ine 9-209, S.P. 33			8,5
continue					
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### GEOMARINE FIELD LOG

Silvent   BLM   Rep   Dewald   Date   O8-11-78     Nork Area   Eastern Gulf of Mexico   Supervisor   Beer			Project	41069A
Time  1643 End line 9-209, S.P. 102  1656 Start line 9-210, S.P. 102  1809 End line 9-210, S.P. 33  1834 Start line 9-211, S.P. 33  1939 End line 9-211, S.P. 102  1951 Start line 9-212, S.P. 102  2102 End line 9-212, S.P. 33  2128 Start line 9-104, S.P. 70  2235 End line 9-104, S.P. 1  2256 Start line 9-103, S.P. 1  2400 On line 9-103	Client	BLM Rep Dewald	Date	08-11-78
1643 End line 9-209, S.P. 102  1656 Start line 9-210, S.P. 102  1809 End line 9-210, S.P. 33  1834 Start line 9-211, S.P. 33  1939 End line 9-211, S.P. 102  1951 Start line 9-212, S.P. 102  2102 End line 9-212, S.P. 33  2128 Start line 9-104, S.P. 70  2235 End line 9-104, S.P. 1  2256 Start line 9-103, S.P. 1  2400 On line 9-103	Work Area .	Eastern Gulf of Mexico	Supervisor	Beer
1643 End line 9-209, S.P. 102  1656 Start line 9-210, S.P. 102  1809 End line 9-210, S.P. 33  1834 Start line 9-211, S.P. 33  1939 End line 9-211, S.P. 102  1951 Start line 9-212, S.P. 102  2102 End line 9-212, S.P. 33  2128 Start line 9-104, S.P. 70  2235 End line 9-104, S.P. 1  2256 Start line 9-103, S.P. 1  2400 On line 9-103	Time			
1809 End line 9-210, S.P. 33  1834 Start line 9-211, S.P. 33  1939 End line 9-212, S.P. 102  1951 Start line 9-212, S.P. 102  2102 End line 9-212, S.P. 33  2128 Start line 9-104, S.P. 70  2235 End line 9-104, S.P. 1  2256 Start line 9-103, S.P. 1  2400 On line 9-103		End line 9-209, S.P. 102		
1834 Start line 9-211, S.P. 33  1939 End line 9-211, S.P. 102  1951 Start line 9-212, S.P. 102  2102 End line 9-212, S.P. 33  2128 Start line 9-104, S.P. 70  2235 End line 9-104, S.P. 1  2256 Start line 9-103, S.P. 1  2400 On line 9-103	1656	Start line 9-210, S.P. 102		
1939 End line 9-211, S.P. 102  1951 Start line 9-212, S.P. 102  2102 End line 9-212, S.P. 33  2128 Start line 9-104, S.P. 70  2235 End line 9-104, S.P. 1  2256 Start line 9-103, S.P. 1  2400 On line 9-103	1809	End line 9-210, S.P. 33	,	
1951 Start line 9-212, S.P. 102 2102 End line 9-212, S.P. 33 2128 Start line 9-104, S.P. 70 2235 End line 9-104, S.P. 1 2256 Start line 9-103, S.P. 1 2400 On line 9-103	1834	Start line 9-211, S.P. 33		
2102 End line 9-212, S.P. 33 2128 Start line 9-104, S.P. 70 2235 End line 9-104, S.P. 1 2256 Start line 9-103, S.P. 1 2400 On line 9-103	1939	End line 9-211, S.P. 102		
2128 Start line 9-104, S.P. 70 2235 End line 9-104, S.P. 1 2256 Start line 9-103, S.P. 1 2400 On line 9-103	1951	Start line 9-212, S.P. 102		
2235 End line 9-104, S.P. 1 2256 Start line 9-103, S.P. 1 2400 On line 9-103	2102	End line 9-212, S.P. 33		
2256 Start line 9-103, S.P. 1 2400 On line 9-103	2128	Start line 9-104, S.P. 70		
2400 On line 9-103	2235	End line 9-104, S.P. 1		10
	2256	Start line 9-103, S.P. 1		
	2400	On line 9-103		
				-
			*	

Client

Project 41069A

### GEOMARINE FIELD LOG

Client	BLM Rep Dewald		Date	08-12-78
Work Area _	Eastern Gulf of Mexico		Supervisor	Beer
Time				
0000	On line 9-103			
0002	End line 9-103, S.P. 70			
0023	Start line 9-213, S.P. 65			
0104	End line 9-213, S.P. 102	×-		
0115	Start line 9-214, S.P. 102			
0151	End line 9-214, S.P. 65			
0203	Start line 9-215, S.P. 65			
0243	End line 9-215, S.P. 102			
0254	Start line 9-216, S.P. 102			
0331	End line 9-216, S.P. 65			
0342	Start line 9-217, S.P. 65			
0420	End line 9-217, S.P. 102			
0431	Start line 9-218, S.P. 102			
0508	End line 9-218, S.P. 65			
0535	Start line 9-102, S.P. 102		· .	
0719	End line 9-102, S.P. 1			
0739	Start line 9-101, S.P. 1			
0912	End line 9-101, S.P. 102			
0920	Seismic gear aboard			
0930	Fathometer bar check			
1050	Lane check at nav reference buoy			414
continue				
		WCC	Clie	nt

### GEOMARINE FIELD LOG

		Project	41069A
Client	BLM Rep Dewald	Date	8-12-78
Work Area	Eastern Gulf of Mexico	Supervisor	Beer
Time			
1100	Depart for Area 10 Seas calm, skie overcast w	ith intermitter	t light rain.
	Thunderstorm activity and waterspouts 12 miles	north.	
1530	Deploy nav. lane count buoy, bar check fathoms	ter	
1620	Stream seismic gear		
1732	Start line 10-201, S.P. 70		
1843	End line 10-201, S.P. 1		
1857	Start line 10-203, S.P. 1		
2003	End line 10-203, S.P. 70		
2018	Start line 10-205, S.P. 70		
2128	End line 10-205, S.P. 1		
2142	Start line 10-207, S.P. 1		
2247	End line 10-207, S.P. 70		
2303	Start line 10-209, S.P. 70		
2400	On line 10-209		
	· · · · · · · · · · · · · · · · · · ·		

# WOODWARD-CLYDE CONSULTANTS GEOMARINE FIELD LOG

Project 41069A Rep Dewald Date 8 -13-78 Supervisor Beer Work Area <u>Eastern Gulf of Mexico</u> Time 0000 On line 10-209 End line 10-209, S.P. 1 0011 Start line 10-211, S.P. 1 0025 0129 End line 10-211, S.P. 70 0147 Start line 10-213, S.P. 70 0256 End line 10-213, S.P. 1 Start line 10-215, S.P. 1 0312 0335 Abort line 10-215, S.P. 30 Navigation computer failure 0802 Continue line 10-215, S.P. 28 Running on manual navigation 0837 End line 10-215, S.P. 70 Start line 10-217, S.P. 70 0858 1002 End line 10-217, S.P. 1 Skies clear, seas building slightly from very calm to 1'-2'. Winds 5-10 knots. 1054 Start line 10-104, S.P. 102 End line 10-104, S.P. 1 1250 1310 Start line 10-103, S.P. 1 1446 End line 10-103, S.P. 102 1505 Start line 10-102, S.P. 102 1645 End line 10-102, S.P. 1 1706 Start line 10-101, S.P. 1 1838 End line 10-101, S.P. 102 continue

Client

Project 41069A

### GEOMARINE FIELD LOG

Client	BLM	Rep	Dewald		Date	8-13-78
Work Area _	Eastern Gulf of	Mexico			Supervisor	Beer
Time	### Eastern Gulf of Mexico  ### Start line 10-218, S.P. 70  End line 10-218, S.P. 1  Start line 10-216, S.P. 1  End line 10-216, S.P. 70  Start line 10-214, S.P. 70  End line 10-214, S.P. 1  On line change					
1935	Obsert line 10	210 CD 7	0			
2045	End line 10-21	18, S.P. 1				
2103	Start line 10-	-216, S.P. 1				-
2205	End line 10-2	L6, S.P. 70				
2228	Start line 10-	-214, S.P. 7	0			
2336	End line 10-2	14, S.P. 1				
2400	On line change	3				
			-			
<del></del>						
744						
				· · · · · · ·		<del></del>
			· 			

### GEOMARINE FIELD LOG

Client	BLM Rep Dewald	Project Date	41069A 8-14-78
Work Area		Supervisor	Beer
-		-	
Time			
0000	On line change		
0030	Start line 10-212, S.P. 1		
0133	End line 10-212, S.P. 70		
0156	Start line 10-210, S.P. 70		
0308	End line 10-210, S.P. 1		
0324	Start line 10-208, S.P. 1		
0433	End line 10-208, S.P. 70		
0450	Start line 10-206, S.P. 70		
0555	End line 10-206, S.P. 1		
0613	Start line 10-204, S.P. 1		
0728	End line 10-204, S.P. 70		
0752	Start line 10-202, S.P. 70		
0859	End line 10-202, S.P. 1		
0912	Seismic gear aboard, underway to land-count but	oy. Skies clea	c, seas
	clam, wind 5-10 knots		
0955	Check lane count at nay, reference buoy		
1000	Depart for St. Peterstburg		
2130	Arrive dock, St. Petersburg End of cruise I		
	WCC	Clie	



3.2 Time Allotment



## TABLE OF TIME ALLOTMENT (HOURS) CRUISE I GEOPHYSICAL SURVEY

DESCRIPTION: DAY	PORT TIME	TRANSIT TIME	SURVEY TIME	DOWN*
7/13	10	14		
7/14	10	24		
7/15		24		
7/16		24	15	5W, 2N, 2E
7/17			5	19N
7/17			8	16N
7/18		10	9	5W
7/19		10	9	14W,10N
			6	
7/21	0		б	16W,2N 16W
7/22 7/23	8		5	13W
	ь			13W
7/24		-	16	8W. 4W
7/25		5	15	
7/26			9	15W
7/27	_	4		3W,10N,7S
7/28	5	4		158
7/29		6	11	7N
7/30			12	12N
7/31			14	2W,8N
8/1		8	16	
8/2		15	9	
8/3			24	
8/4	7	11		6N
8/5		10	5	7N,2E
8/6		1	20	3W
8/7		2	22	
8/8		3	21	
8/9			21	1W,2E
8/10		16	8	
8/11			24	
8/12		4	20	
8/13			19	5N
8/14	2	11	11	

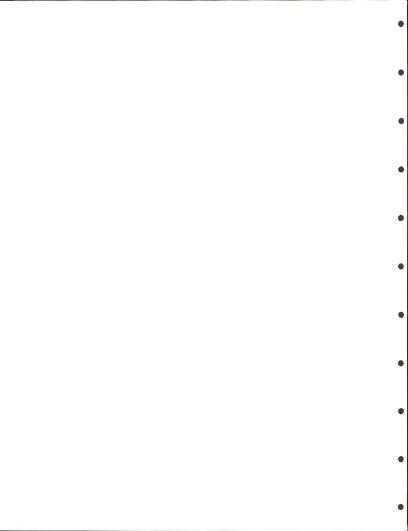
#### \*DOWN TIME SOURCE

E = WCC EQUIPMENT FAILURE

S = SHIP PROBLEMS

N = NAVIGATION EQUIPMENT FAILURE

W = WEATHER EFECTING NAVIGATION SIGNALS AND/OR DATA QUALITY



3.3 Daily Operational Log



#### GEOMARINE DAILY FIELD REPORT

	BLM			ī	CRAN			Projec	t	41069A 7/11/78	
							7.1.0		isor.	BEER	
lrea _	EASTER	N GULF OF	MEXICO -	PORT	ARTHUR	نظلت	(AS	Superv	isur ,		
ield	Personnel										
AME				HOURS		NAME					HOUS
	BEER			8		5	McELMAN				12
	RESTA			12		6.	MEES (ON	SHOR	E)		
3.	BURKE			12		7.					
	GALLARDE			12							
Time S	tart Work Day	2200					Boat Leaves D				
tre E	ind Work Day	2200				11m2	Boat Ties Up				
ICC Eq	uipment										
	UNIBOOM					3	ONAN GEN	ERATO	R		
	MES SYSTEM					4.	SUPPORT	ELECT	ORN	ICS	
-											
ental	Equipment	arramm.					CD1 1/10	500			
	KLEIN 530						SEA MAC				
٠	EDO 4034 (	CM				4					
	lables/Spares C					,				•	
											The same of the sa
. —						۳۰					
quipm	ent Lost					Reaso	in.				
	ng Equipment										
	tractors										
	DECCA SURV									No. of	Men Z
	M/V SEA TE										Men
ental	Vehicles 1	. HERTZ	CAR								
erșon	al Vehicles 1										
ork A	ccomplished B	EER/MEES	TRAVEL TO	PORT	ARTHUR	CO	TINUE MO	BILIZ	ATIC	ON OF SU	IRVEY_VES
				SUPPL	IES AND EX	PEXSES					
	CAS	H ITEM		AMOUNT	1	C	REDIT/CHARGE	METI	CARD	OR FIRM	THUCKA
1.						7.					-
-						3.					
						5.					
4.						6.					
4. 5.											
2. 3. 4. 5. 6. 7.						8.					
4. 5. 6. 7.	Total Cash F	rverses			i	8.	Total Cred	it Expen	868		
4. 5. 6. 7.	Total Cash E	xpenses RED_SHOWE	RS			8.	Total Cred	it Expen	888		

Initials: WCC\_\_

Client

#### GEOMARINE DAILY FIELD REPORT

			Project 41069A	
Client BLM	Rep KRAN		Date 7/12/78	
Area EASTERN GULF OF MEX	ICO - PORT ART	HUR, TEXAS	Supervisor BEER	
Field Personnel				
NAME	HOURS	NAME		HCURS
PEED	12	5. McELMAN		12
2. RESTA	12	6. MEES (ON	SHORE)	
3. BURKE				
CATTADDE				
4. GALBARDE				
Time Start Work Day 0800		Time Boat Leaves Do	ock DOCKSIDE	
Time End Work Day 2200		Time Boat Ties Up		
WCC Equipment		ONAN CEN	ED A TOD	
		3. ONAN GEN	ELECTORNICS	
2. MES SYSTEM		4.		
Rental Equipment				
TOT DIEN END CHOMEN		3. SEA MAC	500	
2. EDO 4034 CM		4		
2		**		
Expendables/Spares Consumed				
1		3.		
2		4		
Equipment Lost		Reason		
1		-		
2				
Floating Equipment				
Subcontractors				
			No. of	Men 2
2. M/V SEA TRANSPORTER			No. of	Men 3
Rental Vehicles   HERTZ CAR Personal Vehicles   1.		2		
Personal Vehicles 1. COMPLETE MOBIL	TZATION OF CIL	DUEV VECCEI		
Work Accomplished GOTH ELLE HOBE	JIZATION OF 30.	KVEC VESSEE		
	SUPPLIFS AN	ID EXTENSES		
CASH ITEM	AMOUNT	CREDIT/CHARGE I	TEM CARD OR FIRM	AMOUNT
2.		2.		
4.		3.		
5.		5.		
6.		7.		1
8.		8.		
Total Cash Expenses		Total Credi	t Expenses	
THIMDUDGEORGE		2000 07600		
Weather INUNDERSTURMS				

Initials: WCG\_\_\_\_\_Client\_\_\_

GEOMARINE DAILY FIELD REPORT

			Project 41069A	
lient BLM R	ep KRAN		Date 7/13/78	
rea EASTERN GULF OF MEXICO	- PORT ARTH	UR, TEXAS	Supervisor BEER	
ield Personnel				
AME .	HOURS	NAME		HOU
		5. McELMAN		8
	- 8	MEES (ON	SHORE)	
	- 8			
BURKE				
GALLARDE	8	8		
ime Start Work Day 0800		Time Boat Leaves D	ock 1000 (H & H	DOCK)
ime End Work Day 2200		Time Boat Ties Up	1140-1600 AT FUE	L DOCK
CC Equipment .				
INITROOM		3. ONAN GEN	ERATOR .	
		SUPPORT	ELECTORNICS	
MES SYSTEM	-	4		
ental Equipment				
KLEIN 530 SYSTEM		3. SEA MAC	500	
. EDO 4034 CM		4.		
xpendables/Spares Consumed		3		
•				
••		4		
quipment Lost		Reason		
loating Equipment				
ubcontractors				
			No. of M	len 2
M/V SEA TRANSPORTER			No. of N	en 6
ental Vehicles 1.		2		
ersonal Vehicles 1. DEPART FOR SURV				
ork Accomplished DELAKT FOR BOKY	DI PICLEI			
	SUPPLIES AND	EXPENSES		
CASH ITEM	AMOUNT	CREDIT/CHARGE	TTEM CARD OR FIRM	ANDUNT
		1.		
3.		3.		
		5.		
4.				
4. 5. 6.		5. 6.		

Initials: WCC\_\_

Client BLM		Date 7/14/78 Supervisor BEER	******
rea EASTERN GULF OF MEXIC	0	Supervisor District	
ield Personnel			
AME.	HOURS	NAME E	SCO.
priin	8	5. McELMAN	8
RESTA	-8	6. MEES (ON SHORE)	
BURKE	0	7.	
GALLARDE		8	
Time Start Work Day 0700	-	Time Boat Leaves Dock AT SEA	
ine End Work Day2200		Time Boat Ties Up	
CC Equipment UNIBOOM		3. ONAN GENERATOR	
		SUPPORT ELECTORNICS	_
MES SYSTEM		4.	
Rental Equipment			
KLEIN 530 SYSTEM		3. SEA MAC 500	
EDO 4034 CM		4.	
		4.	-
expendables/Spares Consumed			
		3	
		4.	
quipment Lost		Reason	
			-
loating Equipment			
Subcontractors			
- DECCA SURVEYORS		No. of Men 2	_
. M/V SEA TRANSPORTER		No. of Men 6	-
lental Vehicles 1.		2	
Personal Vehicles 1.		2.	
ork Accomplished ENROUTE TO SUF	VEY AREA; CH	ECK OUT ALL EQUIPMENT	
	SUPPLIES AN	ID EXPENSES	
OLOU NOW!	AMOUNT	CREDIT/CHARGE ITEM CARD OR FIRM ANDUTE	
CASH ITEM	ATIOUTI	1.	
2. 3.		2.	
4. 5.		4.	
6.		6.	
8.		7. 8.	
Total Cash Expenses		Total Credit Expenses	
eather GOOD			

GEGMARINE.	DATEV	ETELO	DEDUO.
------------	-------	-------	--------

			Project	41069A	
Client BLM Re	p KRAN			7/15/78	
Area EASTERN GULF OF MEXICO			Supervis	or BEER	
Field Personnel					
NAME	HOURS	NAME			HOUR
1. BEER	8_	5. McELMAN			8_
RESTA .	8	6. MEES (ON	SHORE	)	
3. BURKE	8	7			
GALLARDE	_8_	8			
Time Start Work Day 0700		Time Boat Leaves D			
Fine End Work Day 2400		Time Boat Ties Up			
WCC Equipment					
INTROOM		3. ONAN GEN	ERATOR		
		SUPPORT			
MES SYSTEM		4			
Rental Equipment					
. KLEIN 530 SYSTEM		3. SEA MAC	500		
EDO 4034 CM		4			
xpendables/Spares Consumed					
		3			
2.		4.			
•		**			
Equipment Lost		Reason			
l	-				
2					
loating Equipment					
Subcontractors					
				No. of	Men 2
M/V SEA TRANSPORTER				No. of	Man 6
. MYV SEA TRANSPORTER				ND. 01	nen
ental Vehicles 1.		_ 2			
ersonal Venicles I.		L.			
fork Accomplished ENROUTE TO SUR	VEY AREA; CA	LIBRATE NAVIGA	TION;	CHECK & C	AL_SEISMI
GEAR					
	SUPPLIES AND E	XPENSES			
CASH ITEM	AMOUNT	CREDIT/CHARGE 1	TEM C	ARD OR PIRM	AMOUNT
2.		2.			
3.		3.			
5.		5.			
7.		7.			
8.		8.			
		Total Credi	t Expense	F	
Total Cash Expenses					
Total Cash Expenses					

		Project 41069A	
lient BLM	Rep KRAN	Date 7/16/78	
rea EASTERN GULF OF MEXICO	0 - AREA #1		
ield Personnel			
	HOURS	NAME :	HOURS
AME BEER		5. McELMAN	
RESTA		6. MEES (ON SHORE)	
	12		
CATTADDY		7.	
GALLARDE	12	8.	
Time Start Work Day 0000		Time Boat Leaves Dock AT SEA	
Time End Work Day 2400		Time Boat Ties Up	
CC Equipment UNIBOOM		3. ONAN GENERATOR	
		SUPPORT FIRCTORNICS	
MES SYSTEM		4. JOHN BEETSKIES	
Rental Equipment			
MITTH FOO CHOTEM		3. SEA MAC 500	
EDO 4034 CM		4.	
. 120 1031 01.		7*	
Expendables/Spares Consumed			
1.		3.	
2		4	
Equipment Lost		Reason	
l		4	
2.			
Floating Equipment			
Subcontractors			
DECCA SURVEYORS		No. of Me	n2
			n 6
lental Mehicles 1		2.	
Rental Vehicles 1.		2.	
Personal Vehicles 1,		2,	
Rental Vehicles 1. Personal Vehicles 1. 45 LINE MILES		2,	
Personal Vehicles 1,		- C	
Personal Vehicles 1	SUPPLIES AND	EXPENSES	
Personal Vehicles 1,		- C	
Personal Vehicles 1	SUPPLIES AND	EXPENSES	
Personal Vehicles 1	SUPPLIES AND	EXPENSES	
Personal Vehicles 1	SUPPLIES AND	EXPENSES	
Personal Vehicles 1	SUPPLIES AND	EXPENSES	
CASH ITEN   CASH	SUPPLIES AND	EXPENSES    CREDIT/CRARGE STEM   CADD OR FIEM   1.   2.   3.   4.   4.   4.   4.   4.   4.   4	AMOUNT
Personal Vehicles 1.  Ork Accomplished 45 LINE MILES  CASH ITEM  1. 2. 3. 4. 5. 6. 7. 6. Fotal Cash Expenses	SUPPLIES AND	EXPENSES	AMOUNT
CASH ITEN   CASH	SUPPLIES AND	EXPENSES    CREDIT/CRARGE STEM   CADD OR FIEM   1.   2.   3.   4.   4.   4.   4.   4.   4.   4	AMOUNT

Initials: WCC

GEOMARINE DAILY FIELD REPORT

Client BLM	Rep KRAN	Da Da	oject 41069A te 7/17/78	
Area EASTERN GULF OF MEXIC			pervisor BEER	
Field Personnel				
AME	HOURS	NAME		HOL
1. BEER	12	5. McELMAN		1
RESTA	12_	6. MEES (ON SI	iore)	
3. BURKE		7		
GALLARDE	1.0	8		
Time Start Work Day 0000		Time Boat Leaves Dock		
Time End Work Day 1400		Time Boat Ties Up	1400	
VCC Equipment		•		
. UNIBOOM		<ol> <li>ONAN GENERA</li> </ol>	TOR	
MES SYSTEM		SUPPORT ELI	CTORNICS	
Rental Equipment				
. KLEIN 530 SYSTEM		3. SEA MAC 500	)	
EDO 4034 CM		4		
Expandables/Spares Consumed				
1.		3		
		4		
2		7.		
quipment Lost		Reason		
1		-		
2				
Floating Equipment				
Subcontractors				
. DECCA SURVEYORS			No. of	Men
M/V SEA TRANSPORTER			No. of	Men
Rental Vehicles 1.		2		
Personal Vehicles 1.		2		
Nork Accomplished 15 LINE MILES				
	SUPPLIES AND		CARD OR FIRM	AMOUNT
CASH ITEM	AMOUNT	CREDIT/CHARGE ITEM	CAND ON FIRM	ASOUTT
ž.		2.		-
4.		4,		
5.		5.		-
b.		7.	+	-
8.		8.		1
T-1-1-0-1-1		Status Con- 374 Po-	mandag	
Total Cash Expenses		Total Credit Ex	penses	

Initials: WCC

			Project _	41069A	
Client BLM	Rep KRAN		Date	7/18/78	3
Area EASTERN GULF OF MEXICO			Supervisor		
Field Personnel					
NAME .	HOURS	NAME			HOUS
1. BEER	12	5. McELMAN			12
RESTA	_12_	6. MEES (ON	SHORE)		
3. BURKE	1.0	7.			
	1.2	8.			
				1300	
Time Start Work Day1200		Time Boat Leaves Do			
Time End Work Day 2400		Time Boat Ties Up _			
WCC Equipment					
INTROOM		3. ONAN GEN	RATOR		
		CHIPDOPT		NICS	
2. MES SYSTEM		4			
Rental Equipment					
THE PLANT FOR SHIPPING		3. SEA MAC	500		
2. EDO 4034 CM		4.			
Expendables/Spares Consumed					
1.		3.			
		4.			
2.		4.			
Equipment Lost		Reason			
1.					
2.					
Floating Equipment					
Subcontractors					
. DECCA SURVEYORS				No. of	Men 2
M/V SEA TRANSPORTER				N6	6
. III DEA TRANSFORTER				NO. 01	ren
Rental Vehicles 1.		2			
rersonal venicles 1.					
Work Accomplished 15 LINE MILES					
	SUPPLIES	AND EXPONSES			
CASH ITEM	AMOUNT	CREDIT/CHARGE IN	EM CASI	OR FIRM	AMOULT!
1.		1.			
7.		3.			
3.		14.	1 .		-
2. 3. 4. 5.		5.			1
2. 3. 4. 5. 6.		5.			
2. 3. 4. 5. 6. 7.		5. 6. 7. 8.			
6. 7. 8.		7. 8.	Page 1972		
6. 7.		7.	Expenses		

Initials: WCC

Client

Restaur   Supervisor   BEER   Supervisor   BEER	lient BLM	Ren KRAN	Project 410 Date 7/1	9/78
NOME	rea EASTERN GULF OF MEXIC	O - AREA #1	Supervisor BEI	SR.
NOURS   NOURS   NOURS   NOTE				
1		HOURE	V-105	HOU
RESTA		7.2		12
SURKE   12   7.			5. MUDE (ON SHOPE)	
### STATE   12   8.   AT SEA	. RESTA		6. HEES (ON SHORE)	
Time Start Work Day			7	
### ### ### ### ### ### ### ### ### ##	GALLARDE	12		
MCC Equipment   1, UNIBOOM   3, ONAN GENERATOR   2, MES SYSTEM   4, SUPPORT ELECTORNICS	the Stant Hort Day 0000		Time Roat Leaves Dock AT SEA	
WEC Equipment   1. UNIBOOM   3. ONAN CENERATOR   SUPPORT ELECTORNICS	ime End Work Day 2400		Time Boat Ties Up	
NES SYSTEM   3. ONN CEMERATOR				
2. MES SYSTEM 2. SUPPORT ELECTORNICS  Rental Equipment 1. KLEIN 530 SYSTEM 2. EDO 4034 CM 4. Expendables/Spares Consumed 1. 3				
Rental Equipment 1. KLEIN 530 SYSTEM 2. EDO 4034 CM 4. Expendables/Spares Consumed 3	. UNIBOOM			
KLEIN 530 SYSTEM   3. SEA MAC 500	. MES SYSTEM		4. SUPPORT ELECTORNICS	,
KLEIN 530 SYSTEM   3. SEA MAC 500				
### Expendables/Spares Consumed	KLEIN 530 SYSTEM		sea mac 500	
Expendables/Spares Consumed  1.				
1.			7-	
2.	xpendables/Spares Consumed			
Equipment Lost   Equipment			3	
1.   2.	•		4.	
1.   2.	out-out lost		Reason	
Subcontractors	dospient cost			
Subcontractors   No. of Men   2   2   No. of Men   6   No. of Men   2   No. of Men   6   No. of Men   No. of Men   6   No. of Men   No. of Men   6   No. of Men   No.				
Subcontractors   No. of Man				
DECCA SURVEYORS	loating Equipment			
2. M/V SEA TRANSPORTER	ubcontractors			
2. M/V SEA TRANSPORTER	. DECCA SURVEYORS			No. of Men2
Rental Vehicles   1.   2.				No. of Men 6
Personal Vehicles   1.			2	
SUPPLIES AND EXPENSES				
CASH ITSN				
CASH ITEM	ork recomprished			
CASC 4185 AFOOTA AFOOTA AFOOTA AFOOTA CASC 4185 AFOOTA	-	SUPPLIES AN	DEXPENSES	
CISS ALSN AND AND AND AND AND AND AND AND AND AN			COUNTY CHANCE TOTAL CASO OR	FIRM AMOUNT
6. 5. 5. 6. 7. 7	CASH ITEM	AMOUNT:	1.	
6. 5. 5. 6. 7. 7	Z.		3.	
6. 7. 7.	4.		4.	
7.			18:	
8.	7.		7.	
	8.		8,	
Total Cash Expenses Total Credit Expenses	Total Cash Expenses	•	Total Credit Expenses	

Initials: WCC

Area	Date 7/20/78  Supervisor BEER  MCELMAN 1.1  MEES (ON SHORE)
HOURS   NAME   HOURS   NAME	MCELMAN 1.1 MEES (ON SHORE)
BEER   12   5.	MCELMAN 1: MEES (ON SHORE)
BEER   12   5.     RESTA   12   6.	MCELMAN 1: MEES (ON SHORE)
BEER   12   5.     RESTA   12   6.	MEES (ON SHORE)
RESTA   12   6	MEES (ON SHORE)
. BURKE 12 7. GALLARDE 12 8	
ing Start Work Day 0000 Time B	
	Boat Leaves DockAT SEA
ime End Mork Day 2400 Time B	Boat Ties Up
CC Equipment	
	ONAN GENERATOR SUPPORT ELECTORNICS
MES SYSTEM 4	SOFFORT ELECTORATES
ental Equipment	
KLEIN 530 SYSTEM . 3.	SEA MAC 500
. EDO 4034 CM 4.	
xpendables/Spares Consumed	
quipment Lost Reason	
loating Equipment	
bcontractors	No. 16 Vov. 2
	No. of Men 2
	No. of Men
ntal Vehicles 1 2	
rk Accomplished STANDING BY ON WEATHER & NAVIGATI	ION MECHANICALS
SUPPLIES AND EXTENSES	-
	CDIT/CHARGE ITEM CARD OR FIRM ANDUNE
	SHITYORINGS ITEM CAMP ON FIRM MODILE .
2	
5.	
7.	
8.	
Total Cash Expenses	Total Credit Expenses

Initials: WCC

Client\_

#### GEOMARINE DAILY FIELD REPORT

		7103	ect 41069A	
	Rep KRAN		7/21/78	
rea EASTERN GULF OF MEXIC	O - AREA #2	Supe	rvisor BEER	
ield Personnel		-		
AME	HOURS	NAME		HOUR!
REER	1.0	5 McELMAN		12
RESTA	12	6. MEES (ON SHO	ORE)	-
BURKE	12	7		
GALLARDE	12	8.		
ine Start Work Day 0000		Time Boat Leaves Dock		
ine End Work Day 2400		Time Boat fies op		
CC Equipment				
UNIBOOM		<ol> <li>ONAN GENERAT</li> </ol>		
MES SYSTEM		4. SUPPORT ELEC	CTORNICS	
tental Equipment KLEIN 530 SYSTEM		3. SEA MAC 500		
EDO 4034 CM		4.		
xpendables/Spares Consumed				
•		3		
		4.		
		_		
quipment Lost		Reason		
loating Equipment				
ubcontractors				
. DECCA SURVEYORS			No. of	Men2
M/V SEA TRANSPORTER			No. of	Men 6
ental Vehicles 1.		2		
		2		
ersonal Vehicles 1.				
ersonal Vehicles 1.				
Personal Vehicles 1.  18 LINE MILES				
ersonal Vehicles 1.				
rersonal Vehicles 1			CARD OR FIRM	AROUNT
ersonal Vehicles 1.	SUPPLIES AND	EXPENSES  CREDIT/OHARGS ITEM T.	-	ANOUNT
ersonal Vehicles 1	SUPPLIES AND	EXPERSES	-	TRUCHA
ersonal Vehicles 1	SUPPLIES AND	EXPERSES  CREDIT/CHARGE ITEM 1. 2. 3. 4.	-	AROUNT
ersonal Vehicles 1	SUPPLIES AND	EXPOSSS  GREDIT/CHARGE ITEM 1. 2. 3. 4. 5. 6.	-	AROUNT
18 LINE MILES   18 LINE MILE	SUPPLIES AND	CREDIT/CHARGE ITEM 1. 2. 3. 4. 5. 6.	-	AMOURT
rersonal Vehicles 1	SUPPLIES AND	EXPENSES    CREDIT/CHARGS ITEM   1.   2.	-	

Initials: NCC\_\_\_\_\_Client

			ject 41069A	
Client BLM	Rep	Date	7/22/78	
Area EASTERN GULF OF MEXIC			ervisor BEER	
Field Personnel				
NAME	HOURS	NAME		HOURS
1. BEER		5. McELMAN		
RESTA	8	6. MEES (ON SHO	ORE)	
3. BURKE	8	7.		
4. GALLARDE	8	8		
0000		The Book Leaves Book		
Time Start Work Day 0000 Time End Work Day 1800		Time Boat Leaves Dock Time Boat Ties Up	0100	
The Life Hork Day		11112 0040 1100 07		***************************************
WCC Equipment				
1. UNIBOOM		<ol> <li>ONAN GENERAT</li> </ol>	FOR	
z. MES SYSTEM		4. SUPPORT ELEC	CTORNICS	
Rental Equipment		471 1/14 500		
		3. SEA MAC 500		
2. EDO 4034 CM		4.		
Expendables/Spares Consumed				
1		3		
2		4		
Equipment Lost		Reason		
1.				
2.				
Floating Equipment				
Subcontractors				
1. DECCA SURVEYORS			No. of	Yen2
2. M/V SEA TRANSPORTER			No. of I	Men 6
		2.		
Rental Vehicles 1		2		
Work Accomplished RESUPPLY				
work Accomplished				
	SUPPLIES AL	In DANSHARA		
				· · · · · ·
CASH ITEM	AMOUNT:	CREDIT/CHARGE ITEM	CARD OR FIRM	THUCMA
2.		2.		
3.		3.		
5.		5.		
2. 3. 4. 5. 6. 7.		6.		
7.		7.		
8.		0.		1
Total Cash Expenses		Total Credit Exp	enoes	

Weather MARGINAL/BAD

Comments

Initials: WCC\_\_\_\_\_Client\_\_\_\_

#### GEOMARINE DAILY FIELD REPORT

			Project	41069A	
Client BLM	Rep		Date _	7/23/78	
Area EASTERN GULF OF MEXICO	- AREA #2		Superv	isor BEER	
Field Personnel					
	HOURS	NAME			HOU
NAME	12	5. McELMAN			12
1. BEER RESTA	- 12	6. MEES (O	V SHOP	E)	
	12				
3, BURKE		7			
4. GALLARDE	12	8			
76 Start Harl Day 0600		Time Boat Leaves	Dock	0600	
Time Start Work Day 2400		Time Boat Ties Up			
WCC Equipment					
1. UNIBOOM		3. ONAN GE	VERATO	R	
2. MES SYSTEM		SUPPORT	ELECT	ORNICS	
Rental Equipment		074 3440	500		
. KLEIN 530 SYSTEM		3. SEA MAC	300		
2. EDO 4034 CM		4.			
Expendables/Spares Consumed		3			
1.					
2		4			
Equipment Lost		Reason			
1.					
2.					
Floating Equipment					
Subcontractors					
1. DECCA SURVEYORS				No. of	Men2
M/V SEA TRANSPORTER				No. of	Men 7
Pantal Vahicles 1		2			
Rental Vehicles 1.		2.			
Personal Vehicles 1.  Nork Accomplished 16 LINE MILES					
Nork Accomplished					
,	SUPPLIES AND	EXPENSES			
CASH ITEM	AMOUNT	CREDIT/CHARGE	ITEM	CARD OR FIRM	AMOUNT
2.		2.			
2. 3. 4.		4.			
5.		5.			
7. 8.		7.			
					-
Total Cash Expenses Weather MARGINAL		Total Cred	it Expens	:es	

Initials: WCC Client

### GEOMARINE DAILY FIELD REPORT

			Project 41059A	
Client BLM	Rep			
Area EASTERN GULF OF MEXIC	O - AREA #2			
Field Personnel				Hallac
NAME	HOURS	NAME MARKET MAN		HOURS
1. BEER		5. McELMAN	( OHODE)	
2. RESTA		6. MEES (ON		
3. BURKE	12_	7		
4. GALLARDE	12	8		
			AT SEA	
Time Start Work Day 0000		Time Boat Leaves D	ock AT SEA	
Time End Work Day 2400		Time Boat Ties Up		
NCC Equipment				
IINTROOM		<ol> <li>ONAN GEN</li> </ol>	ERATOR	
		SUPPORT	ELECTORNICS	
Z. PIES SISIER		7.		
Rental Equipment				
1. KLEIN 530 SYSTEM		<ol> <li>SEA MAC</li> </ol>	500	
2. EDO 4034 CM		4.		
Expendables/Spares Consumed				
1		3.		
2.		4		
Equipment Lost		Reason		
1				
2				
Floating Equipment				
Subcontractors				0
1. DECCA SURVEYORS			No. 01	men
2. M/V SEA TRANSPORTER			No. of	Men /
Rental Vehicles 1.		2		
Personal Vehicles 1.		2		
Personal Vehicles 1.  Hork Accomplished 47 LINE MILES				
	SUPPLIES AND	EXPENSES		
	T mount	CREDIT/CHARGE	ITEM CARD OR FIRM	AMOUNT
CASH ITEM	AMOUNT	T.	TIEN CARD ON TARRE	A.00112
2.		3.		<del> </del>
4.		14.		
5.		6.		
7.		7.		
		,		
8.				
8. Total Cach Expenses		Total Cred	it Expenses	
E.  Total Cash Expenses Heather FAIR/POOR		Total Cred	it Expenses	

Initials: WCC

### GEOMARINE DAILY FIELD REPORT

NOME				Project	41069A	
Rest	Client BLM	Rep		Date	7/25/78	
NOME				Supervis	or BEER	
BEER						
BEER	Field Personnel					
2. RESTA 12 6. MEES (ON SHORE) 3. BURKE 12 7. 4. GALLARDE 12 8.  Three Start Work Day 0000 Time Boat Leaves Dock AT SEA Time Boat Time Boat Leaves Dock AT SEA Time Boat Time Time Boat Time Boat Time Time Time Time Ti		-				HOUR
2. RESTA 12 6. MEES (ON SHORE) 3. BURKE 12 7. 4. CALLARDE 12 8.  Time Start Work Day 0000 Time Boat Leaves Dock AT SEA  Time Start Work Day 2400 Time Boat T	1. BEER	12	5. McELMAN			12
Second			MEES (ON	SHORE	()	
CALLARDE   12   8	TOTAL PARTY.	12 .				
Time Start Work Day	3. BORKE					
MCC Fquipment   NUTEDOM	4. GALLARDE					
MCC Fquipment   NUTEDOM	Time Start Work Day 0000		Time Boat Leaves D	ock	AT SEA	
1. UNIBOOM 2. MES SYSTEM 4. SUPFORT ELECTORNICS 4. SEA NAC 500  Expendables/Spares Consumed 1. 3			Time Boat Ties Up			
1. UNIBOOM 2. MES SYSTEM 4. SUPFORT ELECTORNICS 4. SEA NAC 500  Expendables/Spares Consumed 1. 3						
2. NES SYSTEM  4. SUPPORT ELECTORNICS  Rental Equipment 1. KLEIN 530 SYSTEM 2. EDO 4034 CM 4. Expendables/Spares Consumed 1. 3			OVER OUR	TD I MOD		
Rental Equipment	1. UNIBOOM					
1. KLBIN 530 SYSTEM 3. SEA MAC 500 2. EDO 4034 CM 4.  Expendables/Spares Consumed 1. 3. 4. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	2. MES SYSTEM		4. SUPPORT	ELECTO	RNICS	
1. KLEIN 530 SYSTEM 3. SEA MAC 500 2. EDO 4034 CM 4.  Expendables/Spares Consumed 1. 3. 2. 4.						
2. EDO 4034 CM 4.  Expendables/Spares Consumed  1. 3. 4.  2. 4.  Equipment Lost Reason  1. 2.  Floating Equipment Lost  1. 2.  Floating Equipment  Subcontractors  1. DECCA SURVEYORS No. of Man 2  2. M/V SEA TRANSPORTER No. of Man 7  Rental Vehicles 1. 2.  Personal Vehicles 1. 2.  Everyonal Vehicles 1. 2.  Everyonal Vehicles 1. 2.  Everyonal Vehicles 1. 2.  Everyonal Vehicles 1. 2. 2.  Everyonal Vehicles 1. 2. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.	TIT TITLE COO OTTOMITM		004 3440	F00		
Expendables/Spares Consumed  1.			3. SEA MAC	300		
1.   3.   4.	2. EDO 4034 CM		4.			
1.   3.   4.						
2.	Expendables/Spares Consumed					
2.	1.		3			
Equipment Lost  1.  2.  Floating Equipment  Subcontractors  1. DECCA SURVEYORS  2. M/V SEA TRANSPORTER  No. of Men 2  More Management  No. of Men 7  Rental Vehicles 1.  2.  Personal Vehicles 1.  2.  Work Accomplished  AREA 2 - 15 LINE MILES  AREA 3 - 32 LINE MILES  SUPPLIES AND EXPENSES  CASH STEM AND MANUAT  1.  1.  1.  1.  1.  1.  1.  1.  1.  1			4.			
1. 2. Floating Equipment						
2.   Floating Equipment   Subcontractors   No. of Men   2     No. of Men   2     No. of Men   2     No. of Men   7     No. of Men   2     No. of M						
2.   Floating Equipment   Subcontractors   No. of Men   2     No. of Men   2     No. of Men   2     No. of Men   7     No. of Men   2     No. of M	Equipment Lost		Reason			
Subcontractors   No. of Man 2   2   No. of Man 2   2   No. of Man 5   No. of Man 5   No. of Man 7   No. of Ma						
Subcontractors   No. of Man   2   No. of Man   2   No. of Man   2   No. of Man   7   No.	1.					
DECCA SURVEYORS	1					
2. M/V SEA TRANSPORTER	1					
2	1. 2. Floating Equipment					
Rental Vehicles   1.	1. 2. Floating Equipment Subcontractors	The second secon				
AREA 2 - 15 LINE MILES   AREA 3 - 32 LINE MILES	1				No. of	Men2
AREA 2 - 15 LINE MILES	1. 2. 5. Floating Equipment Subcontractors 1. DECCA SURVEYORS 2. M/V SEA TRANSPORTER				No. of	Men2
AREA 3 - 32 LINE MILES  SUPPLIES AND EXPENSES  CASH ITEM AMOUNT 1. CASH ITEM AMOUNT 2. C.	1		2		No. of	Men2 Men7
CASH ITEM	1. 2. Floating Equipment Subcontractors 1. DECCA SURVEYORS 2. M/V SEA TRANSPORTER Rental Vehicles 1.		22.		No. of	Men2 Men7
CASH ITEM	1.   2.   5.   5.   5.   5.   5.   5.   5	LINE MILES	22.		No. of	Men2 Men7
CAST ALON BOOM!  1	1.   2.   5.   5.   5.   5.   5.   5.   5	LINE MILES	22.		No. of	Men2 Men7
1.	1	LINE MILES LINE MILES	2 2		No. of	Men2 Men7
6. 6. 5. 6. 6. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7.	1	LINE MILES LINE MILES SUPPLIES AU	22		No. of	Ken
6. 6. 5. 6. 6. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7.	1	LINE MILES LINE MILES SUPPLIES AU	22		No. of	Ken
6.	1	LINE MILES LINE MILES SUPPLIES AU	2. 2. D EXTENSES CREDIT/CHARGS. 1. 2.		No. of	Ken
7	1. 2. 5. Floating Equipment	LINE MILES LINE MILES SUPPLIES AU	2. 2. 2. CREDIT/CHARGE . 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.		No. of	Ken
B	1. 2. Floating Equipment  Subcontractors 1. DECCA SURVEYORS 2. M/V SEA TRANSPORTER  Rental Vehicles 1  Personal Vehicles 1  AREA 2 - 15  AREA 3 - 32   CASH ITEN  2. 3. 3. 5.	LINE MILES LINE MILES SUPPLIES AU	2. 2. 2. D EXPENSES CASOITS/CHARGE 1. 2. 3. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.		No. of	Ken
10.	1. 2. Floating Equipment  Subcontractors 1. DECCA SURVEYORS 2. M/V SEA TRANSPORTER  Rental Vehicles 1  Personal Vehicles 1  AREA 2 - 15  AREA 3 - 32   CASH ITEN  2. 3. 3. 5.	LINE MILES LINE MILES SUPPLIES AU	2. 2. 2. CREDIT/CHARGE : 1. 3. 4. 5.		No. of	Ken
	1.   2.	LINE MILES LINE MILES SUPPLIES AND	2. 2. 2. CREDIT/CHARGS . 1 5. 5. 6. 7. 8. 8.	TTEN C	No. of	Men

Initials: WCC\_

\_\_\_\_\_ Client

			Project _	41069A	
Client BLM Rep			Date	7/26/78	
rea EASTERN GULF OF MEXICO			Superviso	r BEER	
Cald Damananal					
ield Personnel	HOURS	NAME			HOURS
AME BEER	12	5. McELMAN			12
RESTA	12	6. MEES (ON	SHORE)		
BURKE	12				
		7 8			
. GALLARDE	_12				
ime Start Work Day 0000		Time Boat Leaves Doc	k AT	SEA	
ime End Work Day 2400		Time Boat Ties Up			
TO F. James					
CC Equipment UNIBOOM		3. ONAN GENE	RATOR		
		4. SUPPORT E			
. MES SYSTEM		**			
ental Equipment					
KLEIN 530 SYSTEM		3. SEA MAC 5	00		
EDO 4034 CM		4			
xpendables/Spares Consumed		3			
		4			
quipment Lost		Reason			
loating Equipment					
Touching Equipment					
Subcontractors					_
. DECCA SURVEYORS				No. of	Men 2 7
M/V SEA TRANSPORTER				No. of	Men
ental Vehicles   1.		2.			
		2			
ork Accomplished 30 LINE MILES					
	SUPPLIES AND	expenses			
CASH ITEM	AMOURT	CREDIT/CHARGE IT	EM CA	RD OR FIRM	TRUCMA
].		1. 2.			
3.		3.			
4.		5.			
6.		6. 7.			
7.		8.			
		Sedal C-314	Penguana		
Total Cash Expenses	-				

Initials: WCC

Client

		Project 41069A	
Dient BLM	Rep -		8
Area EASTERN GULF OF MEXIC		Supervisor BEER	
ield Personnel			
IAME	HOURS	NAME	HOUS 12
. BEER	12	5. McELMAN	
RESTA	12	6. MEES (ON SHORE)	
BURKE	12	7.	
GALLARDE	12	8	
		•	
ime Start Work Day		Time Boat Leaves Dock Time Boat Ties Up 1600	
Time End Work Day 1800		Time boat hes op	
ACC Equipment			
. UNIBOOM		3. ONAN GENERATOR	
MES SYSTEM		SUPPORT ELECTORNICS	
Rental Equipment			
		3. SEA MAC 500	
EDO 4034 CM		4	
Expendables/Spares Consumed			
ı		3.	
2		4.	
Quipment Lost		Reason	
I.		And Section 1.	
		•	
Ploating Equipment			
loating Equipment			
Subcontractors			
DECCA SURVEYORS		No. 0	f Men2
M/V SEA TRANSPORTER		No. c	of Men 7
		2	
		2	
Personal Vehicles 1	PHED /NATE MEG		
Nork Accomplished DOWN TO WEAR	THER/NAV. FIE	MANICALS	
	SUPPLIES A		
- CASH ITEM	AMOUNT	CREDIT/CHARGE ITEM CARD OR FIRM	TRIUCMA
2.		2.	
3.		3.	
5.		5.	
6.		6.	
1.		8.	
8.			
8. Total Cash Expenses		Total Credit Expenses	

Initials: WCC\_\_\_\_\_Client

			Project 41069A	
Client BLM	Rep DEWALD		Date 7/28/78	
Area EASTERN GULF OF MEXIC			Supervisor BEER	
ield Personnel				
AME	HOURS	NAME		HOURS
		5, McELMAN		8
RESTA	- 8	6. MEES (O	A CHUSE)	
	8 8			
BURKE	8			
GALLARDE		8		
ime Start Work Day 0800		Time Boat Leaves	Dock 1915	
ime End Work Day 2400				
ICC Equipment				
UNIBOOM		3. ONAN GEI	VERATOR	
MES SYSTEM		4. SUPPORT	ELECTORNICS	
kental Equipment KLEIN 530 SYSTEM		3. SEA MAC	500	
. EDO 4034 CM		4.		
xpendables/Spares Consumed				
		3.		
		4.		
quipment Lost		Reason		
loating Equipment				
ubcontractors			No. of	Men 2
M/V SEA TRANSPORTER			No. of	Mon 7
ental Vehicles 1.		²		
ersonal Vehicles 1.		2		
ork Accomplished REPAIR BOAR I	EQUIPMENT/RES	UPPLY		
	SUPPLIES AND	DEXTENSES		
CASH ITEM	AMOUNT	CREDIT/CHARGE	ITEM CARD OR PIRM	AMOUNT
7.		2.		
3.		3.		
5		5.		
6.		6.		-
7.		8.		
<u> </u>			1	
Total Cash Expenses		Total Cred	lit Erpenses	
Pather FAIR/BAD				

Client

Initials: WCC\_

### GEOMARINE DAILY FIELD REPORT

lient BLM	non I	DEWALD			Date	41069A 7/29/78	
rea EASTERN CULF OF MEXICO					Superv	isor BEER	
rea EASTERN GULF OF MEXICO	- AREA	74			Juperv		
ield Personnel							
AME	HOURS		NAME				HOUR
BEER	12		5	McELMAN			
RESTA	1 2		6	MEES (O	N SHOR	E)	
BURKE			7				
GALLARDE	12		8				
2022				Boat Leaves	n A'	T SEA	
ime Start Work Day 2400			Time	Boat Leaves -	DOCK		
Time End Work Day			Tine	bode vies of			
CC Equipment							
UNIBOOM			3	ONAN GE SUPPORT	NERATO	R	
MES SYSTEM			4	SUPPURI	ELECT	URNICS	
ental Equipment KLEIN 530 SYSTEM			,	SEA MAC	500		
EDO 4034 CM			-				
. EDU 4034 CM			*				
xpendables/Spares Consumed							
•			3				<del></del>
			4				
quipment Lost			Reas	211			
•							
loating Equipment							
ubcontractors_							
DECCA SUBVEYORS						No. of	Men _ 2
M/V SEA TRANSPORTER						No. of	Nen 7
ental Vehicles 1.							
Personal Vehicles 1.							
ork Accomplished 18 LINE MILES							
	SUPPL	IES AND E	XPENSES				
CASH ITEM	AMOUNT	1	C	REDIT/CHARGE	ITEM	CARD OR FIRM	AMOUNT
1.			1.				
2. 3. 4.			3.				
4. 5.		1	4.				
6.		1	5. 6. 7.				-
7.			7. 8.				
×.		,			*** =		
Total Cash Expenses				Total Cre	ait Expen	368	
leather GOOD					-		

Initials: WCC\_\_\_\_\_Client

		Pro	oject 41069A	
Client BLM	Rep DEWALD	Da	te 7/30/78	
Area EASTERN GULF OF MEXICO	- AREA #4	Su	pervisor BEER	
Field Personnel				Moune
NAME	HOURS	5. McELMAN		HOURS 12
1. BEER RESTA		6. MEES (ON SI	IORE)	
2. BURKE				
3. DURKE		7.		
4. GALLARDE	12	8.		
Time Start Work Day 0000		Time Boat Leaves Dock	AT SEA	
Time End Work Day 2400		Time Boat Ties Up		
NCC Equipment  UNIBOOM		3. ONAN GENERA	TOR	
		SUPPORT ELI	CTORNICS	
2. MES SYSTEM		4.		
Rental Equipment				
. KLEIN 530 SYSTEM		3. SEA MAC 500	)	
2. EDO 4034 CM		4.		
Expendables/Spares Consumed			•	
1		3.		
2		4		
Equipment Lost		Reason		
1.				
2.				
Floating Equipment				
Proacting Equipment				
Subcontractors				
1. DECCA SURVEYORS			No. of	Men
2. M/V SEA TRANSPORTER			No. of	Nen/
Rental Vehicles 1.		2		
Personal Vehicles 1.		2		
Work Accomplished 36 LINE MILES				
	SUPPLIES AND	EXPONSES		
CASH ITEM	AMOUNT	CREDITY/CHARGE ITEM	CARD OR FIRM	AMOUNT
		1.		
2. 3. 4. 5.		3.		1
5.		5.		
6.		7.		-
/- 8.		8.		
0.4.1.0.1.7		Satal Condit Es	openese	
Total Cash Expenses Weather FAIR/BAD		10000 0.0000 00		
wagnist regard parts				

Initials: WCC\_

Client

			Project 41069A	
Dient BLM	Rep DEWAI	_D	Date 7/31/78	3
rea EASTERN GULF OF MEX			Supervisor BEER	
ield Personnel				1,0110
AMÉ	HOURS	NAME		HOUR
. BEER	12	5. McELMAN		12
RESTA	12	6. MEES (O	N SHORE)	
BURKE	10	7.		
	12	8.		
· ·		THE CONTRACTOR OF THE CONTRACT		
Time Start Work Day 0000 Time End Work Day 2400		Time Boat Leaves	Dock AT SEA	
Time End Work Day 2400		Time Boat Ties Up		
ICC Equipment				
1. UNIBOOM		3. ONAN GE	NERATOR	
1		TGOGGIIG	ELECTORNICS	
MES SYSTEM		4. SUFFORI		
Rental Equipment				
MANAGER CO. OVERWING		3. SEA MAC	500	
2. EDO 4034 CM		4.		
Expendables/Spares Consumed				
1.		3.		
2		**		
Equipment Lost		Reason		
1.				
2				
Floating Equipment				
Subcontractors				
1. DECCA SURVEYORS			No. of	Men2
M/V SEA TRANSPORTER			No. of	Men 7
Rental Vehicles 1.		2		
Personal Vehicles 1.				
Personal Vehicles 1.		"		
Work Accomplished 45 LINE MID	LES			
	SUPPLIES	AND EXPENSES		
CASH ITEM	AMOUNT	CREDIT/CHARGE	ITEM CARD OR FIRM	AMOUNT
Į.		1.		+
2. 3. 4.		3.		
4.		4.		+
5. 6.		6.		
7.		7.		
8.				
Total Cash Expenses		Total Cres	dit Expenses	
Weather FAIR/BAD				
Comments				

Initials: WCC\_\_\_\_\_Client\_

Rep DEWALD  - AREA #4		Date	8/01/78	
- AREA #4			PPPP	
		Supe	rvisor BEER	
	NAME			HOUR
	5. McELM	AN		
	6. MEES	(ON SHO	ORE)	
12	7			
_12	8			
	Time Roat Leav	ves Dock	AT SEA	
	3. ONAN	GENERAT	OR	
	4. SUPPO	KI ELEC	TORNICS	
	CEA M	AC 500		
		22.0		
	4			
	3.			
	**			
	Reason			
	-			
			No. of	Men2
			No. of	Men7
SUPPLIES AND	EXPERSES			
ANTHER	CRADIT/CHA	RGE ITEM	CARD OR FIRM	AMOUNT
100000	T.			
	3.			
	4.			-
	7.			
	L 8.		<del></del>	-1
	Total	Credit Exp	enaee	
-				
		12   5.   McELM   12   6.   MEES   7.   12   8.	12   5.   MCELMAN     12   6.   MEES (ON SHO   12   7.     12   8.     Time Soat Leaves Dock     Time Soat Ties Up     3.   ONAN GENERAT     4.   SUPPORT ELEC     3.   SEA MAC 500     4.     4.     8   Reason     5.     6   CENTY/SMARGS ITEM     7.     6   CENTY/SMARGS ITEM     7.     8   CENTY/SMARGS ITEM     9   CENTY/SMARGS ITEM     1   CENTY/SMARGS ITEM     1   CENTY/SMARGS ITEM     1   CENTY/SMARGS ITEM     2   CENTY/SMARGS ITEM     3   CENTY/SMARGS ITEM     4   CENTY/SMARGS ITEM     5   CENTY/SMARGS ITEM     6   CENTY/SMARGS ITEM     7   CENTY/SMARGS ITEM     7   CENTY/SMARGS ITEM     8   CENTY/SMARGS ITEM     9   CENTY/SMARGS ITEM     10   CENTY/SMARGS ITEM	12   5.   McELMAN     12   6.   MEES (ON SHORE)     12   7.     12   8.

Initials: WCC\_

Client \_\_\_

Client   BLM				Project	41069A	
Second   S	lient BLM	Rep DEWALD		Date	8/02/78	
NOTE	rea EASTERN GULF OF MEXICO	O - AREA #5		Superviso	or BEER	
BEER						
BEER						NO.12
DECK						
BURKE   12   7.	. BEER		5. MCELMAN	arrann'		
### STATE   12   8.	. RESTA	12				
### STATE   12   8.	BURKE	12	7.			
NAME   SUPPORT ELECTORNICS   NES SYSTEM	GALLARDE	12	В			
### ACC Equipment   UNIBOOM	to Sand Mark Day 0000		Time Roat Leaves D	nck	AT SEA	
NAME   SUPPORT ELECTORNICS   NES SYSTEM	ine End Work Day 2400					
UNIBOOM   3. ONAN GENERATOR						
### SUPPORT ELECTORNICS  ### SUPPORT ELECTORNICS  ### SUPPORT ELECTORNICS  ### SUPPORT ELECTORNICS  ### SEA MAC 500  ### SEA MAC 500  ### Expendables/Spares Consumed  ### Support Electrornics  ### Expendables/Spares Consumed  ### Support Electrornics  ### ### SEA MAC 500  ### ### ### ### ### ### ### ### ###						
Nemal Equipment   KLEIN 530 SYSTEM   3. SEA MAC 500	. UNIBOOM		3. ONAN GEN	ERATOR		
KLEIN 530 SYSTEM   3. SEA MAC 500	. MES SYSTEM		4. SUPPORT	ELECTO	RNICS	
KLEIN 530 SYSTEM   3. SEA MAC 500	Fautanest					
### AND LINE MILES    CASH ITEM   ANDUNT   CASH ITEM   CASH OF FIEM   ANDUNT   CASH ITEM   CASH OF FIEM   ANDUNT   CASH ITEM   CASH ITEM   CASH OF FIEM   ANDUNT   CASH ITEM   CASH OF FIEM   CASH OF FIE	KLEIN 530 SYSTEM		3 SEA MAC	500		
	EDO 4034 CM					
3   4						-
Reason   R	xpendables/Spares Consumed					
Reason   R			3			
Reason   R						
			Reason			
Closting Equipment		-				
DECCA SURVEYORS						
DECCA SURVEYORS						
DECCA SURVEYORS						
M/V SEA TRANSPORTER	ubcontractors					
2   2   2   2   2   2   2   2   2   2					No. of I	Yen
2.   2.   30 LINE MILES   2.     30 LINE MILES   30 LINE MIL	M/V SEA TRANSPORTER				No. of N	Men/
Supplies And Exercises	ental Vehicles 1.		2			
SUPPLIES AND EXPENSES     CASO OR FIEM   ASSURT	ersonal Vehicles 1.		2			
SUPPLIES AND EXPENSES     CASO IN TYPEN	ork Accomplished 30 LINE MILES					
CASH ITEM   ANSWET   CREDIT/CHARGE ITEM   CASO OR FIRM   ANSWET						
Control   Cont		SUPPLIES AND E	KPENSES			
1.     1.       2.     2.       3.     3.       4.     4.       5.     5.       6.     6.       7.     7.       8.     6.	CASH ITEM	AMOUNT	CREDIT/CHARGE 1	TEM C	tRO OH FIRM	AMOUNT
5. 5. 6. 6. 7. 7. 7. 7. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6.	Υ.		1.			-
5. 5. 6. 6. 7. 7. 7. 7. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6.	3.		3.			
6. 5. 7. 7. 8. 8.	4.		5.			
	6.		6.			
	7.		8.			<u> </u>
Total Cash Expenses Total Credit Expenses	Y					

Initiale: WCC\_

Client

					Project _	41069A	
Client BLM Rep	DE	WALD			Date	8/03/78	
Area EASTERN GULF OF MEXICO -					Superviso	BEER	
Field Personnel	HOURE		NAME.				HOURS
NAME	HOURS		NAME	McELMAN			12
1. BEER 2. RESTA	12 12		5	MEES (ON	CHUDE)	-	
3. BURKE							
4. GALLARDE	12		8				
Time Start Work Day 0000 Time End Work Day 2400			Time Time	Boat Leaves Do Boat Ties Up _	ck AT	SEA	
WCC Equipment							
1. UNIBOOM			3	ONAN GENE	ERATOR	TTCC	
2. MES SYSTEM			4	SUPPORT I	SLECTOR	NICS	
Rental Equipment							
1. KLEIN 530 SYSTEM			3.	SEA MAC	500		
2. EDO 4034 CM							
Expendables/Spares Consumed							
1.							
2			4				
Equipment Lost			Reas	on			
1			-				
2							
Floating Equipment							
Subcontractors						No of	Man 2
1. DECCA SURVEYORS 2. M/V SEA TRANSPORTER						No. of	Men 7
Rental Vehicles 1.							
Personal Vehicles 1.			2.				
Work Accomplished 90 LINE MILES							
	SUPPL	IES AUD EX	PEMBES				
CASH ITEM	AMOUNT		C.	REDIT/CHARGE IN	EM CAR	O OR FIRM	TYIUCHA
1.			2.				
3.			3.				
5.			5.				
6. 7.			6.				
17.			8.				
				Total Credit	Venanera		
Total Cash Expenses	_			iotai treas	LIPERESE		
Weather GOOD							
Conments							

Initials: WCC\_\_\_\_

	•	Proje	ect 41069A	
lient BLM	RepDEWALD	Date	8/04/78	
Area EASTERN GULF OF MEXIC	:0	Supe	rvisor BEER	
Field Personnel		*****		HOUR
MAME	12	NAME 5. MCELMAN		
BEER RESTA		6. MEES (ON SHO	RE)	
3. BURKE		7		
GALLARDE		8		
Time Start Work Day 0600		Time Boat Leaves Dock		
Time End Work Day 2200		Time Boat Leaves Dock Time Boat Ties Up	1030	
HCC Equipment  1. UNIBOOM		3. ONAN GENERAT	'OR	
		SUPPORT ELEC	TORNICS	
MES SYSTEM		4.		
Rental Equipment				
1. KLEIN 530 SYSTEM		3. SEA MAC 500		
2. EDO 4034 CM		4.		
Expendables/Spares Consumed				
1.		3		
2.		4.		
Equipment Lost		Reason		
1.				
2.				
Floating Equipment				
Subcontractors				
DECCA SURVEYORS			No. of	Men
M/V SEA TRANSPORTER				Men /
Rental Vehicles 1.		2.		
Personal Vehicles 1.		2		
Work Accomplished MAINTENANCE	& REPAIR; RESU	PPLY		
	SUPPLIES AND E	XPENSES		
. CASH ITEM	AMOUNT	CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
).		2.		-
3.		3.		
5.		5.		
6.		6.		-
/+ R		8.		+
×1				
Total Cash Expenses		Total Credit Expe	nsss	
Weather GOOD				
Comments				

Initials: WCC\_

			Project	41069A	
Client BLM Rep			Date	8/05/78	
Area EASTERN GULF OF MEXICO -			Supervisor	BEER	
Field Personnel					Henre
NAME	HOURS	NAME No. 707 364 37			12
1. BEER	12	6. MCELMAN MEES (ON	( CHORE)		
2. RESTA	12				
3. BURKE		7			
4. GALLARDE	_12_	8			
Time Start Work Day0500		Time Boat Leaves I	ock 051	0	
Time End Work Day 2400		Time Boat Ties Up			
WCC Equipment		ONAN CEN	TER ATOR		
1. UNIBOOM		3. ONAN GEN	ELECTORN	TCS	
2. MES SYSTEM		4			
Rental Equipment					
KLEIN 530 SYSTEM		<ol> <li>SEA MAC</li> </ol>	500		
2. EDO 4034 CM		4.			
61					
Expendables/Spares Consumed					
1.		3			
2.		4			
Equipment Lost		Reason			
1.					
2.					
Floating Equipment					
Trooting Equipment					
Subcontractors					
1. DECCA SURVEYORS				No. of I	en
2. M/V SEA TRANSPORTER					Men7
Rental Vehicles 1.		2			
Personal Vehicles 1.		2			
Work Accomplished 6 LINE MILES					
	SUPPLIES AND	EXPENSES			
CASH ITEM	AMOUNT	CREDIT/CHARGE	ITEM CARD	OR FIRM	AMOUNT
1.		2.			
3.		3.			
5.		5.			
6.		7.			
7.		8.			
LVI			VA Pomovos		
Total Cash Expenses		rotal Cred	it Expenses _		
Weather GOOD					
Comments					

Initials: WCC\_\_\_\_\_Client

### Rental Equipment   Subcontractors   Line	Project   41069A
Test   Personnel	Supervisor   BEER
SUPPLIES AND EXCESS   Supplies	McELMAN
BEER	McELMAN J MEES (ON SHORE)  Boot Leaves Dock AT SEA
BEER	McELMAN J MEES (ON SHORE)  Boot Leaves Dock AT SEA
RESTA	MEES (ON SHORE)  Boot Leaves Dock AT SEA
RESTA	e Boat Leaves Dock AT SEA
BURKE	e Boat Leaves Dock AT SEA
GALLARDE	e Boat Leaves Dock AT SEA
Start Work Day	e Boat Leaves DockAT SEA
To C Equipment	e Boat leaves Dock AT SEA e Boat Ties Up
TEC Equipment	e Boat Ties Up
CC Equipment	
UNIBOOM	
MES SYSTEM  dental Equipment  KLEIN 530 SYSTEM  a EDO 4034 CM  dental Equipment  a EDO 4034 CM  dental Equipment  dental Equipment  dental Equipment  dental Equipment  dental Equipment  dental Vehicles  look Accomplished  54 LINE MILES  SUPPLIES AND EXCENTING  SUPPLIES	·
MES SYSTEM  ental Equipment  KLEIN 530 SYSTEM  EDO 4034 CM  appendables/Spares Consumed  quipment Lost  B  contractors  DECCA SURVEYORS  M/V SEA TRANSPORTER ental Vehicles 1. ersonal Vehicles 1. ersonal Vehicles 1.  SUPPLIES AND EXCENTIONAL  SUPPLIES AND EXCENT	ONAN GENERATOR
ental Equipment KLEIN 530 SYSTEM EDO 4034 CM 4  ***xpendables/Spares Consumed	SUPPORT ELECTORNICS
KLEIN 530 SYSTEM  EDO 4034 CM  ***appendables/Spares Consumed**  **quipment Lost**  **losting Equipment	
KLEIN 530 SYSTEM  EDO 4034 CM  ***appendables/Spares Consumed**  **quipment Lost**  **quipment Lost**  **losting Equipment	
EDO 4034 CM  spendables/Spares Consumed	SEA MAC 500
approach Lost  Quipment Lost  Be to the following Equipment when the following Equipment with the following Equipment when the following Equipment to the following Equipment E	
guipment Lost R  Guipment Lost R  Dosting Equipment Understand R  Suppose Surveyors N/V SEA TRANSPORTER  Hental Vehicles 1.  Gersonal Vehicles 1.  Fork Accomplished 54 LINE MILES  SUPPLIES AND EXPER	
guipment Lost R  Guipment Lost R  Dosting Equipment Understand R  Suppose Surveyors N/V SEA TRANSPORTER  Hental Vehicles 1.  Gersonal Vehicles 1.  Fork Accomplished 54 LINE MILES  SUPPLIES AND EXPER	
Quipment Lost  Iosting Equipment  ubcontractors  DECCA SURVEYORS  M/V SEA TRANSPORTER  ental Vehicles 1.  errsonal Vehicles 1.  fork Accomplished  54 LINE MILES  SUPPLIES AND EXPER	
losting Equipment	
	son
losting Equipment	
losting Equipment  ubcontractors  . DECCA SURVEYORS  . M/V SEA TRANSPORTER  ental Vehicles 1.  fersonal Vehicles 1.  fork Accomplished 54 LINE MILES  SUPPLIES AND EXPER	
ubcontractors  DECCA SURVEYORS  M/V SEA TRANSPORTER  ental Vehicles 1.  tersonal Vehicles 1.  Sork Accomplished 54 LINE MILES  SUPPLIES AND EXPEN	
DECCA SURVEYORS M/V SEA TRANSPORTER ental Vehicles 1. ersonal Vehicles 1. ork Accomplished 54 LINE MILES  SUPPLIES AND EXPER	
DECCA SURVEYORS M/V SEA TRANSPORTER ental Vehicles 1. ersonal Vehicles 1. ork Accomplished 54 LINE MILES  SUPPLIES AND EXPER	
M/V SEA TRANSPORTER  ental Vehicles 1.  ersonal Vehicles 1.  54 LINE MILES  SUPPLIES AND EXPEN	
ental Vehicles 1. ersonal Vehicles 1. 54 LINE MILES Supplies AND EXPER	No. of Ren
ersonal Vehicles 1.  54 LINE MILES  Supplies AND EXPER	No. of Men
ersonal Vehicles 1.  54 LINE MILES  Supplies AND EXPEN	
ork Accomplished 54 LINE MILES  Supplies AND EXPER	
SUPPLIES AND EXPEN	
	26
CASH ITEM AMOUNT	
1.	CREDIT/CHARGE ITEM CARD OR FIRM AMOUNT
2.	
3	
5.	
6.	
7.	
Total Cash Expenses	

Initials: WCC\_\_\_\_\_Client\_

## WOODWARD-CLYDE CONSULTANTS

#### GEOMARINE DAILY FIELD REPORT

Dient BLM	Rep DEWALD	Dat Dat	e 8/07/78	
rea EASTERN GULF OF MEXICO		Sur	ervisor BEER	
feld Personnel				
IAME	HOURS	NAME		HOUR
. BEER	12	5. McELMAN		12
RESTA	12	6. MEES (ON SH	ORE)	
BURKE	12	7		
GALLARDE	12	8		
0000			AT SEA	
Time Start Work Day		Time Boat Leaves Dock _ Time Boat Ties Up		
Time End Work pay		Time boat fres op	:	
ICC Equipment				
UNIBOOM		3. ONAN GENERA	TOR	
MES SYSTEM		4. SUPPORT ELE	CTORNICS	
Rental Equipment				
KLEIN 530 SYSTEM		3. SEA MAC 500		
EDO 4034 CM		4		
xpendables/Spares Consumed				
		3		
		4.		
quipment Lost		Reason		
2.				
loating Equipment				
Toacting Equipment				
Subcontractors				
. DECCA SURVEYORS			No. of	Men2
M/V SEA TRANSPORTER			No. of	Men /
Rental Vehicles 1.		2		
Personal Vehicles 1.		2		
Work Accomplished 78 LINE MILES				
	SUPPLIES AND	EXPENSES		
alor Trible	AMOUNT	CREDIT/CHARGE ITEM	CAND OR PIRM	TRUCKA
CASH ITEM	200011	1.		
2.		3.		
4.		4.		
5		5.		-
6.	-	6.	1	
6. 7. 8.		7.		

Client

Initials: WCC\_

#### WOODWARD-CLYDE CONSULTANTS

### GEOMARINE DAILY FIELD REPORT

			Project	41069A	
Client BLM	Rep DEWALD	)	Date		
Area EASTERN GULF OF M	EXICO - AREAS 6 8	7	Superviso	BEER	
Field Personnel					
NAME	HOURS	NAME			HOURS
1. BEER	12	5. McELMAN			12
RESTA	12	6. MEES (ON			
3. BURKE	12	7			
CATTADDE	12	8			
		Time Boat Leaves D	. at	AT SEA	
Time Start Work Day 0000 Time End Work Day 2400		Time Boat Ties Up	JCK		
Time Lind ABPK Day 2400		Time boat ties op			
MCC Equipment					
1. UNIBOOM		<ol> <li>ONAN GEN</li> </ol>			
. MES SYSTEM		4. SUPPORT	ELECTOR	NICS	
Rental Equipment		071 1110			
1. KLEIN 530 SYSTEM	-	3. SEA MAC	500		
2. EDO 4034 CM		4			
Expendables/Spares Consumed					
1,		3			
2		4			
		Reason			
Equipment Lost					
1					
Floating Equipment					
Subcontractors					
DECCA SURVEYORS				No. of	Men 2
M/V SEA TRANSPORTER				No. of	Men 7
		2.			
Rental Vehicles 1.					
		2.			
Personal Vehicles 1.					
Personal Vehicles 1.					
Personal Vehicles 1.					
Personal Vehicles 1.					
Personal Vehicles 1.	ES		тем СА	RD OR FIRM	ANOURT
Personal Vehicles 1	SUPPLIES AND	EXPENSES	тем сл	RD OR FIRM	ANOUNT
Personal Vehicles 1.  Kork Accomplished 60 LINE MILE  CASH ITEN  2.	SUPPLIES AND	CREDIT/CHARGS 1 1. 2. 3.	TEM CA	RD OR PIRM	AROURT
Personal Vehicles 1.  Kork Accomplished 60 LINE MILE  CASH ITEN  2.	SUPPLIES AND	CREDIT/CHARGE 1 T. Z. 3.	TEM CA	RD OR PIRM	AMDURT
Personal Vehicles 1	SUPPLIES AND	CREDIS/CHARGE 1	TEM CA	RD OR PIRM	THUCKA
Personal Vehicles 1	SUPPLIES AND	C2EDIT/CHARGS 1 1. 2. 3. 4. 5. 6. 7.	TEM CA	RD OR FIRM	AMOURT
Personal Vehicles 1.  CASH ITEM  CASH ITEM  2.  3. 4. 5. 6. 7. 7.	SUPPLIES AND ANOUNT	EXPENSES			ASOURT
Personal Vehicles 1.  Kork Accomplished 60 LINE MILE  CASH ITEN  2.	SUPPLIES AND ANOUNT	C2EDIT/CHARGS 1 1. 2. 3. 4. 5. 6. 7.			A2001T

Client \_\_\_

Initials: WCC

		P	roject 41069A	
Client BLM	Rep DEWALD	D	8/09/78	
rea EASTERN GULF OF MEXI		S	upervisor BEER	
ield Personnel				
AME	. HOURS	NAME		HOUR
. BEER	12	5. McELMAN		1
RESTA	12	6. MEES (ON S	HORE)	
BURKE	12_	7		
GALLARDE	12	8		
		Time Boat Leaves Dock	AT CEA	
line Start Work Day 0000		Time Boat Ties Up		
ime End Work Day 2400		This boat tres op		
CC Equipment				
UNIBOOM		<ol> <li>ONAN GENER</li> </ol>		
. MES SYSTEM		4. SUPPORT EL	ECTORNICS	
Rental Equipment		CRA MAC 50	10	
		3. SEA MAC 50	10	
EDO 4034 CM		4.		
Expendables/Spares Consumed		3		
1.				
2		4.		
Equipment_Lost		Reason		
1.				
2.				
loating Equipment				
loating Equipment				
Subcontractors				
Subcontractors  DECCA SURVEYORS	No. of the latest and		No. of	Men2
. DECCA SURVEYORS			No. of	Men 2 1
DECCA SURVEYORS  M/V SEA TRANSPORTER			No. of	Men
. DECCA SURVEYORS  M/V SEA TRANSPORTER  Rental Vehicles 1.		2	No. of	Men
DECCA SURVEYORS M/V SEA TRANSPORTER Rental Vehicles 1.		2	No. of	Men
DECCA SURVEYORS M/V SEA TRANSPORTER Rental Vehicles 1.		2	No. of	Men
. DECCA SURVEYORS . M/V SEA TRANSPORTER tental Vehicles 1.		2	No. of	Men
DECCA SURVEYORS NOTICE TO THE PROPERTY OF THE	SUPPLIES AND	2	No. of	Men
. DECCA SURVEYORS . M/V SEA TRANSPORTER tental Vehicles 1.		2	No. of	Men
DECCA SURVEYORS M/V SEA TRANSPORTER  Rental Vehicles 1. Personal Vehicles 1. BZ LINE MILES  82 LINE MILES	SUPPLIES AND	2	No. of	Men
DECCA SURVEYORS M/V SEA TRANSPORTER  Rental Vehicles 1. Personal Vehicles 1. BZ LINE MILES  82 LINE MILES	SUPPLIES AND	2. 2. 2. EXPENSES  CREDIT/CHARGE ITEM 1. 2. 3. 3.	No. of	Men
DECCA SURVEYORS M/V SEA TRANSPORTER  Rental Vehicles 1. Personal Vehicles 1. BZ LINE MILES  82 LINE MILES	SUPPLIES AND	2	No. of	Men
DECCA SURVEYORS M/V SEA TRANSPORTER  Rental Vehicles 1.  Personal Vehicles 1.  BZ LINE MILES  CASH ITEM  CASH ITEM  C. C	SUPPLIES AND	EXPENSES  CREDIT/CHARGE ITEM  1. 3. 4.	No. of	Men
DECCA SURVEYORS NOTICE TO THE PROPERTY OF THE	SUPPLIES AND	2	No. of	Men
1. DECCA SURVEYORS 2. M/V SEA TRANSPORTER  Rental Vehicles 1.  Personal Vehicles 1.  LIONA Accomplished 82 LINE MILES  CASH ITEM  1.  2.  3.  4.  5.	SUPPLIES AND	2	No. of  No. of	ASSUIT
1. 2. 3. 4. 5.	SUPPLIES AND AMOUNT	2	No. of	ASSUIT

Initials: WCC\_\_\_\_\_Client\_\_

## WOODWARD-CLYDE CONSULTANTS

### GEOMARINE DAILY FIELD REPORT

								Project	41069A	
Client	BLM			Ren	DEW	ALD		Date	8/10/78	3
EA	ASTERN C		MEXICO					Supervisor	BEER	
ield Perso	onne1									
MAME					HOUR5	NAME				HO.
BEEF	3				12_		McELMAN			
REST	ΓA				12	6				
BURK	ΚĒ				12	7.				
. GALI	LARDE				12	8				·
		0000				Tim	Boat Leaves (	ook AT S	EA	
lime Start Time End W	Work Day _ ork Day					Time	Boat Ties Up			
MCC Equipme	ent									
. UNIE	BOOM SYS	STEM				3				
RAYT	THEON AL	THOMET	ER			4				
Rental Equi										
I. KLEI	LN 530						SEA MAC			
EDO	4034					4				
Evnendahles	s/Spares Co	nsumed						·		
						3.				
Equipment 1				-		Reas				
١										
						-				
Subcontract										
	CA SURVE									
M/V	SEA TRA	NSPORT	ER						No. of i	len/
Rental Vehi	icles 1.					2.		·		
ersonal Ve	ehicles 1.					2.				
ork Accomp	plished2	6 LINE	MILES							
						UND EXPENSES				
									OR FIRM	AMOUNT
r.	CASH	ITEM		AMO	UNT	1.	CREDIT/CHARGE	IIGM CAMB	OR FIRM	BESTUTE.
ž. 3.						2.				
4.						4.				
5.						5.				
						7.				
6. 7.						8.				

			Project	41069A	
lient BLM	Rep DEWALD		Date 8	3/11/78	
rea EASTERN GULF OF MEXICO	- AREA #9		Supervisor	BEER	
ield Personnel					
AME	HOURS	NAME			HOUP
. BEER	12	5. McELMAN			12
. RESTA	12	6. MEES (ON			
BURKE	12	7.			
GALLARDE	12	8			
			. AT	SEA	
ime Start Work Day 0000		Time Boat Leaves Doc	.k		
ime End Work Day 2400		Time Boat Ties Up			
CC Equipment					
UNIBOOM		<ol> <li>ONAN GENE</li> </ol>	RATOR		
MES SYSTEM		SUPPORT E	LECTORN	ICS	
. HES SISIEN		**			
ental Equipment					
KLEIN 530 SYSTEM		3. SEA MAC 5	00		
EDO 4034 CM		4			
xpendables/Spares Consumed					
		3			
		4			
		Reason			
quipment Lost		11203011			
•					
loating Equipment					
ubcontractors					
DECCA SUPVEYORS				No. of h	en2
M/V SEA TRANSPORTER				_ No. of N	ten 7
ental Vehicles 1.		2.			
ork Accomplished 90 LINE MILES					
	SUPPLIES AND	EXPENSES			
CASH ITEM	AMOUNT	CREDIT/CHARGE IT	EM CARD	OR FIRM	AMOUNT
LASH TIEN  2.		1.			
3.		3.			
4		4. 5.			
5.		6.			
7.		7.			
6.					-
Total Cash Expenses		Total Credit	Expenses _		

Initials: WCC\_

Client

### WOODWARD-CLYDE CONSULTANTS

#### GEOMARINE DAILY FIELD REPORT

			Project	41069A	
lient BLM	Reo DEWALI	D	Date		
rea EASTERN GULF OF MEXICO	- AREA 9 &	10	Superviso		
ield Personnel					
AME	HOURS	MAME			HOUR
BEER	12	5. McELMAN			12
RESTA	12	6. MEES (O	N SHORE)	1	
BURKE	12	7			
GALLARDE	12	8.			
0000		Time Boat Leaves	Dock AT	SEA	
ime Start Work Day 0000 ime End Work Day 2400		Time Boat Ties Up			
INE LINE HOPK Day					
ICC Equipment					
UNIBOOM		<ol><li>ONAN GE</li></ol>	NERATOR		
MES SYSTEM		SUPPORT	ELECTOR	RNICS	
ental Equipment					
KLEIN 530 SYSTEM		3. SEA MAC	500		
EDO 4034 CM		4			
xpendables/Spares Consumed					
•		3			
		4.			
		Reason			
quipment Lost		1,5692			
•					
loating Equipment					
subcontractors					
DECCA SURVEYORS				No. of	Men2
M/V SEA TRANSPORTER				No. of	Men 7
tental Vehicles 3		2.			
ental Vehicles 1ersonal Vehicles 1		2.			
ork Accomplished 66 LINE MILES					
	SUPPLIES AN	D EXPENSES			
CASH ITEM	AMOUNT	CREDIT/CHARGE	ITEM CA	ED OR FIRM	AMOUNT
T.	7335537	1.			1
Z. 3.	-	3.			
<u>4</u> .		4.			-
6.	-	6.			
7.		7. B.			
8.					
Fotal Cash Expenses	and the second	Total Cree	dit Expenses	· ———	

Initials: WCC\_\_\_\_\_Client

## WOODWARD-CLYDE CONSULTANTS

### GEOMARINE DAILY FIELD REPORT

			Projec	t41069A	
Client BLM	Rep DEWALD		Date	8/13/78	
Area EASTERN GULF OF MEXI				risor BEER	
Field Personnel					
NAME	HOURS	BAME NO TRANS			HOUR 1:
. BEER		5. McELMAN			
RESTA	12	6. MEES (C	ON SHOR	(E)	
BURKE	12	7			
GALLARDE	12	8			
0000				AT SEA	
Time Start Work Day 0000		Time Boat Leaves Time Boat Ties U			
THE ENG WOPK DAY Z400		This boat ties o			
ACC Equipment					
UNIBOOM		3. ONAN GE			
MES SYSTEM		4. SUPPORT			
ental Equipment					
KLEIN 530 SYSTEM		3. SEA MAC	500		
EDO 4034 CM		4.			
xpendables/Spares Consumed					
		3			
		4			
Continued Land		Reason			
quipment Lost					
loating Equipment					
ubcontractors					
				No. of	Men 2
M/V SEA TRANSPORTER				No. of	Men 7
ental Vehicles 1.					
ersonal Vehicles 1.					
ork Accomplished 78 LINE MILES					
	SUPPLIES AN	D EXPENSES			
CASH ITEM	AMOUNT	CREDIT/CHARGE	ITEM	CARD OR FIRM	AMOUNT
1.		7.			1
3.		3.			-
4.		5.			-
6.		6.			
7.		7.			+
0.					
Total Cash Expenses		Total Cre	dit Expen	ses	
eather GOOD					

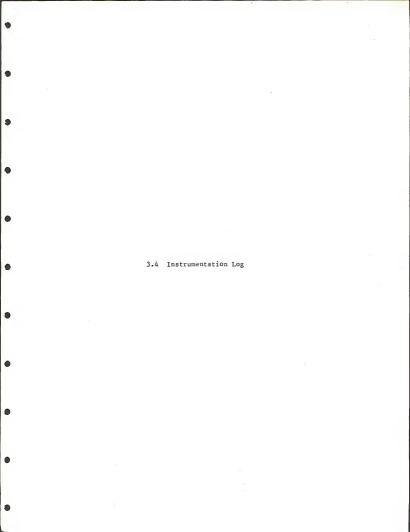
Initials: WCC Client

			Project .	41069A	
lient BLM	Rep DEWALD		Date	8/14/78	
rea EASTERN GULF OF MEXICO			Supervis	or BEER	
ield Personnel					
AME	HOURS	NAME			HOU
. BEER	12	5. McELMAN			1
RESTA	12	6. MEES (ON	SHORE	)	
BURKE	12	7			
GALLARDE	12	8.			
ime Start Work Day 0000		Time Boat Leaves Do	ick		
ime End Work Day 2200		Time Boat Leaves Do Time Boat Ties Up	2130	)	
CC Equipment		3. ONAN GEN	ED A TOD		
. UNIBOOM		CHEDOOPT		NICS	
. MES SYSTEM		4	ELECTO	MICO	
ental Equipment					
KLEIN 530 SYSTEM		<ol> <li>SEA MAC</li> </ol>	500		
EDO 4034 CM		4.			
xpendables/Spares Consumed		3			
•					
•		4			
quipment Lost		Reason			
•		-			
loating Equipment					
ubcontractors					
DECCA_SURVEYORS				No. of	Men2
M/V SEA TRANSPORTER				No. of	Men
ental Vehicles   1.					
		2.			
ersonal Vehicles 1.		2			
ersonal Vehicles 1.		2			
ersonal Vehicles 1.					
ersonal Vehicles 1.				LED OR FIRM	AMOUNT
ersonal Vehicles 1.  ork Accomplished 36 LINE MILES  CASH ITEM	SUPPLIES AND	EXPSUSES			
ersonal Vehicles 1.  ork Accomplished 36 LINE MILES  CASH ITEM	SUPPLIES AND	CREDIT/CHARGE I			
ersonal Vehicles 1.  ork Accomplished 36 LINE MILES  CASH ITEM	SUPPLIES AND	EXPENSES  CREDIT/CHARGE I			
resonal Yehicles 1.  36 LINE MILES  CASH ITEM 1. 2. 3. 5.	SUPPLIES AND	CREDIT/CHARGE I			
resonal Yehicles 1.  36 LINE MILES  CASH ITEM 1. 2. 3. 5.	SUPPLIES AND	EXPENSES  CREDIT/CHANGS I  1. 2. 3. 4. 5. 6. 7.			
fork Accomplished 36 LINE MILES	SUPPLIES AND	EXPESSES    CREDIT/CHANGE I   1,   2,   3,   4,   5,   5,   5,   7,   7,   8,   1,   1,   1,   1,   1,   1,   1	TEM G	LEO OR FIRM	AROUNT
resonal Yehicles 1.  36 LINE MILES  CASH ITEM 1. 2. 3. 5.	SUPPLIES AND AMOUNT	EXPESSES    CREDIT/CHANGE I   1,   2,   3,   4,   5,   5,   5,   7,   7,   8,   1,   1,   1,   1,   1,   1,   1	TEM G		AROUNT

\_\_\_\_\_ Client

Initials: WCC\_\_\_\_







WOODWARD-CLYDE CONSULTANTS AREA 1

CLIENT BLM

DATE 7/16/78 - 7/17/78 PAGE 1

OPERATOR RESTA PROJ. NO. 41069A

SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR ECHO SOUNDER SCALE CABLE VESSEL SEA LINE SCALE REMARKS RANGE FIX TIME FILTER TVG STATE LINE SWPS/KEY PRINT ENERGY GAIN SPEED NUMBER (MS) SCALE INTERVAL 3' SS Range in meters 0228 100 10 300 40 400/4 150 15/33 106 110 SS layback in feet 36 UNIBOOM layback 138 0514 Echo sounder scale 110 15/33 5 4' in meters 150 105 138 0603 100 300 40 40074 10 100 12 6 80 0853 104 400/4 150 80 15/33 0913 100 10 3 300 40 100 19 110 85 134 1111 150 110 15/33 134 1125 100 300 400/4 10 40 Abort line 116 Restart line 140 134 1435 110 75 50 Nav down 1700 7/17 on line 0352 52 80 110 28 70 5 -1 0455

WOODWARD-CLYDE CONSULTANTS AREA 1 DATE 7/17 - 7/19/78 PAGE · 2

CLIENT BLM OPERATOR RESTA PROJ. NO. 41069A

SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR SCALE SCALE ECHO SOUNDER SCALE VESSEL CABLE SFA REMARKS LINE FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG RANGE M SPEED STATE NUMBER (MS) 7/17 150 15/33 40 400/4 102 0508 100 10 300 110 36 Abort Nav 125 0700 Continue 123 0746 0756 134 . 31 7/18 40 400/4 100 110 15/33 5 1750 100 101 -1 10 300 90 60 100 32 110 78 Echo sounder off 90 1950 2036 134 120 15/33 5 400/4 + 208 2106 100 10 3 300 110 2120 10 2145 Abort On line 80 2321 100 110 1.5/33 5 300 40 400/4 + 2357 100 207 10 7/19 39 0035

MOODWARD-CLYDE CONSULTANTS AREA 1 DATE 7/19/78 PAGE 3

CLIENT BLM

OPERATOR RESTA PROJ. NO. 41069A

SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR SCALE | SCALE CABLE ECHO VESSEL SOUNDER SPEED SEA REMARKS LINE FILTER TVG RANGE STATE FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN out NUMBER (MS) SCALE INTERVAL 100 110 15/33 4 \* 40 400/4 206 0105 100 10 300 0149 100 15/33 5 100 51 - 300 40 400/4 205 1 0218 100 10 3 38 0301 51 + 100 100 15/33 0350 100 10 40 400/4 204 38 3 300 110 33 1 0429 80 15/33 5 100 0456 100 40 400/4 203 10 3 300 38 90 15/33 5 400/4 100 300 40 0605 100 1.0 3 202 38 0645 50 15/33 4 \* 5 40\_\_400/4 + 300 1100 201 0706 100 1.0 3 60 14 38 0753 15/33 5 100 70 0832 100 10 3 300 40 400/4 + 1.06A Abort Nav 0852 And weather

AREA 2

BLM

CLIENT

\_\_\_\_

DATE 7/21/78 - 7/23/78

OPERATOR RESTA

PAGE '4 PROJ. NO. 41069A

_					UNI	BOOM/S	PARKAR	RAY			SIDE SON	SCAN NAR		SEE NOTES			
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE	CABLE	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS	
112	70	0922	100	10	3	_	600	60	300/4	+	100	250	30/66	5	6'	MES system	
	62			<del> </del>								270				2 arrays @	
	2											250				300 each	
		1007							-		1	1					
	1_	1027									1						
111	1	1122	100	10	3		600	60	300/4	+	100	180	30/66	5	61	MES	
3.3.3.	13	2222	200	1-20			- 000		2007			160	1	1			
	50			<del> </del>	-		-	-			1	200					
	65			<del> </del>	-		<del> </del>		1			250	1				
	70	1246	-	<del> </del>	<del> </del>		-						Ì				
		22.10				-	<del> </del>	-									
110	70	1323	100	10	3	1/2	600	60	300/4	+	100	300	30/66	5	71	MES	
110	61	1323	100	1 20	1	1 -/-	1 000	1	30071		1	350					
	53		}	<del> </del>		<del> </del>	+	-	<del> </del>			375					
	26				+		<del> </del>				-	350	1	1			
	1	1419					+		<del> </del>		-			1			
		1419									1	+	1	1			
		-						-			1-	1	1			7/22 down-	
					-			-	-	-	1	-	1			weather	
109	<del>  ,</del>	1742	100	10	3	1/2	300	60	500/3	+	100	160	30/66	5	41	7/23 UNIBOOM	
109	1	1/42	100	10	1 3	1/2	300	1 60	20073	T	1.00	1.00_	10/00	1	T	Abort Nav	
	3							+			1	360	1	1	1	Begin line	
	70	1941	ļ				-				1	340		-	1		
	56		1							<del> </del>	1	320	1	1	1		
	40			-		-				ļ		260	1	1			
	36	2025	-		-		-				-	225	-	-	1		
	12		8										-	-	-		
	1	2103	1											-1			

AREA

CLIENT BLM

DATE 7/23/78-7/24/78 PAGE · 5

OPERATOR RESTA PROJ. NO. 41069A

SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR E CHO SOUNDER VESSEL SEA SCALE CABLE REMARKS LINE SCALE RANGE FILTER TVG SPEED STATE FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN NUMBER (MS) SCALE INTERVAL 260 30/66 41 1/2 300 108 2120 100 10 500/5 100 60 240 18 220 23 240 43 51 53 310 70 2248 30/66 41 1/2 300 500/3 310\_ 70 2312 100 10 3 60 100 24 2400 400/3 260 14 7/24 0021 160 30/66 106 0150 100 1/2 300 400/3 + :-100 10 3 60 6 210 260 31 3/4 41 310 48 70 0324 80/66\_ 1, 1 105 70 0426 100 1.0 3/4 300 60 400/3 +\_\_\_ 1100 1310 3 60/96 68 64 30/66 58 400 47 31 1/2 19 360 9 1

AREA 2 DATE 7/24/78 PAGE · 6

CLIENT BLM OPERATOR RESTA PROJ. NO. 41069A

SIDE SCAN SEE NOTES UNIROOM / SPARKARRAY SONAR CABLE ECHO SOUNDER VESSEL SEA SCALE REMARKS LINE SCALE RANGE out FILTER TVG STATE FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN SPEED NUMBER (MS) SCALE INTERVAL 160 30/66 4 \* 104 0551 100 10 17.2 400 60 400/3 100 270 21 310 38 47 3/4 330 61 70 0727 250 30/66 41 100 1/2 400 103 70 0732 100 1.0 3 400/3 60 300 69 350 67 3/4 460 65 59 60/96 510 52 30/66 31 23 1/2 Nav down - weather 0827 2.0 410 30/66 5 31 3/4 400 60 400/4 + 100 30 1717 100 10 360 22 1/2 310 17 1749 260 30/66 <sup>5</sup> 100 1838 100 10 1/2 400 60 400/3 102 3 410 34 3/4 510 42 60/96 1944

AREA 2

DATE

7/24 - 7/25/78

PAGE · 7

CO CLIENT BLM

OPERATOR RESTA

PROJ. NO. 41069A

					ואט	BOOM/S	PARKAR	RAY				SCAN	,		SEE NOTES			
LINE	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	range M	CABLE	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS		
101	70	2002	100	10	3	3/4	400	60 -	400/4	+	100	510	60/96	5	2'			
	24				-								30/66					
	20			<b></b>	<b></b>	1/2							1					
	11					1/2						480						
	1	2103			-													
201	70	2151	100	10	3	1/2	400	60	400/4	+	100	300	30/66	5	2			
	63			1		1/2	100	- 00	100/4		1	410						
	41				+		-		1			360						
	29			<b></b>	+	<del> </del>	-	-				310	1					
												260						
	14	2248		<del> </del>	+	<del> </del>	-					230						
202	1	2315	100	10	3	1/2	400	60	400/3	+	100	210	30/66	5	1			
202	31	2313	100	10	1-3-	1/2	400_	- 6U	100/3		1	270	1					
	34	<del> </del>	<del></del>	<del> </del>			-	<b></b>			1	330						
	45	0000	<del> </del>	<del> </del>	+	-	-	1	-				1	1		7/25		
		0000		-		0//		-	<del>                                     </del>		1							
<del></del>	70	0026			+	3/4			-		1		1					
	-		1	-	<del> </del>	3/4	400	60	400/4	+	100	460	60/96	5	2			
203	70	0.050	100	10	3	3/4	1.00	1-00	1007.7	-	1	1	30/66					
	58 30		<del> </del>	-		1/2		-	-									
			<del> </del>			1/2	-	+		-	1	410						
-	10	-				-		+	-	1	1	360	ì					
	10			+	+		+	1	-	1					1			
204	1	0149		10	3	1/2	400	60	400/3	+_	100	310	30/6	5 5	3			
204	-	0213	100	10	1-3-		1400	100	1910/3	1		360		1				
-	12 22	-	1				-	-				410						
-	43					3/4	-	-	-	1		510	60/9	6				
	70	0322	-			1 3/4	+	-										
	1	1	1	+		1-		1					_	_				
	-	-	-t			+		1										

7/25/78 PAGE · 8 DATE WOODWARD-CLYDE CONSULTANTS AREA EASTERN GULF OF MEXICO PROJ. NO. 41069A\_ OPERATOR RESTA CLIENT BLM MARINE HABITAT SURVEY SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR ECHO SOUNDER SCALE VESSEL SEA CABLE REMARKS SCALE LINE SCALE RANGE TVG STATE LINE SWPS/KEY PRINT FILTER OHT SPEED FIX TIME ENERGY GAIN NUMBER (MS) INTERVAL MES System 21 710 90/126 400/4 112 70 1426 100 10 600 60 100 660 61 610 51 3/4 510 44 Abort/Nav 48 1541 460 28 460 60/96 100 111 3/4 60 400/4 100 10 600 560 3 32 250/1 710 48 1 760 61 70 1802 100 770 60/96 \$50/1 110 70 1817 100 10 600 60 750 55 720 46 670 43 3/4 635 40 510 38 Fathometer problems 35 repaired 19 1940

 
 WOODWARD-CLYDE CONSULTANTS
 AREA
 3
 DATE
 7/25 - 7/26/78
 PAGE 9
 EASTERN GULF OF MEXICO MARINE HABITAT SURVEY

CLIENT BLM OPERATOR RESTA PROJ. NO. 41069A SIDE SCAN SEE NOTES UNIROOM / SPARKARRAY SONAR SCALE SCALE RANGE CABLE SCHO VESSEL SEA REMARKS LINE LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG FIX TIME SPEED STATE NUMBER (MS) INTERVAL 3 3/4 600 60 250/1 100 510 60/96 2009 100 109 1.0 - 560 40 730 61 70 2116 1 600 60 250/1 + 100 760 60/96 108 70 2138 100 10 . 3 40 3/4 660 33 610 2248 3/4 600 60 250/1 + 100 450 60/96 5 107 2306 100 10 Abort Nav 28 2335 810 90/124 5 2 7/26/78 1 1/4 | 600 | 60 | 250/1 + 100 107 70 1536 100 10 60/96 38 760 65 37 3/4 710 29 24 630 1641 Following seas 610 60/96 5 3/4 600 60 250/1 5 + 100 201 33 1718 100 10 3 560 34 250/2 59 250/1.5 + 70 1757

AREA 3 DATE 7/26/78 PAGE 10

CLIENT BLM

OPERATOR RESTA PROJ. NO. 41069A

SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR ECHO VESSEL CABLE SEA SCALE LINE SCALE REMARKS SOUNDER SPEED FILTER TVG RANGE STATE FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN OUT NUMBER (MS) INTERVAL 21 250/1.5 3 3/4 600 100 510 60/96 202 70 1820 100 10 33 1853 60 250/1.5 + 460 60/96 5.... 1.00 106 1933 250 10 3 3/4 600 33 510 46 570 47 90/126 71 650 74 760 76 810 89 120/15 960 93 1150 95 50/18 96 500 1250 97 1350 99 1450 101 1600 1720 80/210 106 108 1960 113 2180 2330 118 2480 2 120 2600 122 2675 123 150 125

WOODWARD-CLYDE CONSULTANTS AREA 3 DATE 7/26/78 PAGE 11 EASTERN GULF OF MEXICO

OPERATOR RESTA PROJ. NO. 41069A CLIENT BLM MARINE HABITAT SURVEY SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR ECHO VESSEL SPEED SCALE SCALE SCALE CABLE SEA REMARKS LINE RANGE OUT FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG STATE NUMBER (MS) INTERVAL Depth Sounder off 200 2900 180/210 600 250/1.5 + 105 134 2229 200 10 scale 1 3/4 123 3000 1 1/2 114 1 1/4 1.09 150 105 1 100 120/156 93 92 3/4 90/126 86 84 1/2 60/96 62 33 2359 7/27 Nav down 0000 thunderstorms proceeded to Area 4

MCODMARD-CLYDE CONSULTANTS AREA 3 DATE 7/23/78 PAGE 12

EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

CLIENT BLM OPERATOR RESTA PROJ. NO. 41069A

					ואָט	BOOM/S	SPARKAR	RAY			SIDE	SCAN IAR			SEE NOTES		
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS	
			-	INTERNAL PROPERTY.			-	-								Remainder of Area 3	
-			-						-	-			-			surveyed on 8/23 &	
			-				-				1			1		8/24	
101	33	1326	250	10	2		500	20	150/1.	5 +	150	410	100/1	5 4	4'	MES System	
101	38	1320	230	10			300		130/1.	<u> </u>	1	560	X2			Raytheon 719B	
	42		<del></del>						-		1	660	1				
	43						-		<del> </del>			000	150/2	15			
	46		1 .		<del> </del>			-	+	<b></b>	100		X2				
	50		-		ļ		1	<b> </b>				710	1				
	54		-		-	-	<del>                                     </del>	-			l l	760					
	64		1	-	<del> </del>		1			1		860					
	67		1	-		<del> </del>	-			1	1	910		1			
	70		1			2	-				1					Off depth sounder	
	73		1	1	<del> </del>		+		1	1	1	960			1	Scale	
	77	-	1	1	-	-	1	1	1			1180	Ŷ.				
	83	-	1	1	1	-	-	1		1		1240	O. C.				
	87	<del></del>	İ	-	1	1		1				1360					
	89		1		-	-	-		1			1480					
	94		1	-	+	-	-	+				1600		1			
	102		-	1	-	1				1		1960					
	110		1	+		-		1	1			2480					
	116	·	-	+	3	3						2720					
<b></b>	120	<b> </b>	1	1	1	1-			-		150		1	1			
· · · · ·	130	ļ	1	1	1			1								22 off cable	
	134	1528	1	1	-								_			limit	
	1	1	1	-	1								-		-		
208	1	1601	250	10	3	3	500	20	175/1	+	150	2900	Off	4	6'	No SS, DS, SP 1-36 deep water	
1	36	1	1	1												1-36 deep water	
7	-	-	-			-			1	1	5						

EASTERN GULF OF MEXICO CLIENT BLM MARINE HABITAT SURVEY

WOODWARD-CLYDE CONSULTANTS AREA 3 DATE 7/23/78 PAGE 13

OPERATOR RESTA PROJ. NO. 41069A\_

SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR SCALE SCALE OUT SOUNDER SPEED SEA REMARKS LINE RANGE FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG STATE NUMBER (MS) 20 150/1:5 + 660 150/205 4 41 500 207 70 1834 250 10 760 X2 63 910 61 55 1010 1160 52 1360 46 1460 1560 41 1660 39 37 1760 34 1860 2010 2150 18 17 3 2260 11 2310 8 1 2003 1660 150/205 5 564 150/1.5 + 150 206 1 2125 250 10 3 500 1550 X2 11 1410 31 1310 33 1210 35 1110 37 38 2205

AREA 3 DATE 7/23 - 7/24/78 PAGE 14 WOODWARD-CLYDE CONSULTANTS EASTERN GULF OF MEXICO OPERATOR RESTA PROJ. NO. 41069A CLIENT BLM MARINE HABITAT SURVEY SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR VESSEL CABLE ECHO SEA SCALE REMARKS LINE SCALE SOUNDER RANGE FILTER TVG SPEED STATE FIX TIME LINE SWPS/KEY PRINT EKERGY GAIN PUT NUMBER (MS) SCALE INTERVAL 150/205 5 31 150/1.5 + 150 61.0 38 700 205 2239 250 10 500 710 X2 36 810 760 23 810 1.2 910 2326 1050 150/205 5 150 20 150/1.5 + 1 2345 10 500 204 250 1000 X2 6 960 8 2 11 860 13 210 29 860 100/195 44 810 X2 54 8/24 70 0117 1.50/1.5 + 150 400 100/195 4 20 70 0153 10 500 203 250 X2 100 66 460 57 510 52 610 35 710 26 760 20 150/205 5 18 v2 0314

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WOODWARD-CLYDE CONSULTANTS AREA 3

CLIENT BLM

DATE 7/24/78 PAGE 15

OPERATOR RESTA PROJ. NO. 41069A

SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR ECHO VESSEL SOUNDER SPEED SCALE SCALE CABLE SEA REMARKS LINE SCALE FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG RANGE STATE NUMBER (MS) INTERVAL 100/1\$5 4 150/1.5 + X2 150/205 5 X2 1.0 Depth sounder off off scale h910 2260. SS cable out full 1.34 Off... 500 620 150/1.5 + 1.0 

					'S		AREA	3								PAGE 16
		N GULF HABIT				CL	IENT	BI	M			OPERA'	TOR	RESTA		PROJ. NO. 41069
					ואט	BOOM / 5	PARKAR	RAY		,	SIDE	SCAN				SEE NOTES
INE	FIX	TIME	SCALE (MS)	SCALE LINE ENTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG .	RANGE	CABLE	ECHO SOUNDER SCALE	VESSEL SPEED	SE A STATE	REMARKS
.04	33	0812	250	10	2	1	500	250	150/1.	5 +	150	610	100/15	5 4	4'	
	43											710	X2			
	64											810				
	68					2						910				
	83										1	1010				
	89											1410	150/2	5		
	93		1	<b></b>							1	1.610	X2			
	100			1								1850				
	103		1	1								2110				
	106		1								1	2410				
	111		1	1	·						1	2610	1		-	
	117			1			1				200	3000		-		SS cable out full
	119		1	1	3	3					1			ļ		
	134	1000	1		-										-	
			Ì	1							-		1	1		D
07	134	1054	250	10	3	3	500	400	150/1	5_+	200	2900	Off	4	6'	Recording in
	129				2	2							-	-	-	trough
	118	1				1					150		-	ļ	-	
	113											2710				
	111		1	1							_	2510				
-	108	1	1									2210		-		
	106		1									2000	1			
	105	1	1	1	1							1760_	1	-	+	
	100			1	1	1					-	1660	-	-	-	
	98	1	1		-							1450				
	97	1141	1		1										_	
		1	1								_			-		
	1	1	1								1					

 WOODWARD-CLYDE CONSULTANTS
 AREA
 3
 DATE
 7/24/78
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 EASTERN GULF OF MEXICO
 BLM
 OPERATOR
 RESTA
 PROJ. NO. 41069A

SIDE SCAN SEE NOTES UNIROOM / SPARKARRAY SONAR CABLE ECHO VESSEL SPEED SCALE | SCALE SEA REMARKS LINE RANGE FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG STATE (MS) INTERVAL NUMBER Seas confused 150 150/1.5 + 610 150/205 4 1.09 data noisy SS out full 1.400 g t 500 | 500 | 150/1.5 + 3000 Off 

AREA 3 CLIENT BLM

OPERATOR RESTA

PROJ. NO. 41069A

SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR SOUNDER SPEED STATE CABLE SCALE REMARKS LINE SCALE GAIN FILTER TVG RANGE FIX TIME LINE SWPS/KEY PRINT ENERGY OUT NUMBER INTERVAL 150 610 2 500 230 150/1.5 + 112 97 1530 250 10 810 107 1200 110 1510 1.1.3 1660 115 2010 118 2260 121 2510 125 2660 128 2810 1:31 2960 1.33 134 1619 71 355 150/1.5 + 200 3000 Off 3 500 110 134 1654 250 10 3 2910 2 126 2 2710 117 2510 115 2410 113 21.60 1.08 1910 1.05 1.760 103 1310 101 960 1739

PAGE 19 DATE 7/24/78 WOODWARD-CLYDE CONSULTANTS AREA EASTERN GULF OF MEXICO PROJ. NO. 41069A CLIENT BLM OPERATOR RESTA MARINE HABITAT SURVEY SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR SCALE CABLE ECHO SOUNDER SCALE VESSEL SEA REMARKS SCALE LINE FILTER TVG RANGE SPEED STATE FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN oHI. NUMBER (MS) INTERVAL 500 355 150/1.5 + 200 760 51 250 10 2 2 108 1801

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WOODWARD-CLYDE CONSULTANTS AREA 4 DATE 7/29/78 PAGE 20 EASTERN GULF OF MEXICO CLIENT BLM OPERATOR RESTA PROJ. NO. 41069A MARINE HABITAT SURVEY SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR SCALE SCALE CABLE SCHO VESSEL SPEED SEA REMARKS LINE TIME LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG RANGE STATE FIX NUMBER (115) 41 500 250 400/3 1.00 350 60/96 0943 250 1.0 113 460 31 1034 500 60/96 41 250 400/3 100 500 114 1 1107 250 10 61.0 630 610 23 38 1139 20 400/2 + 100 610 60/96 4 41 38 1511 250 10 1 500 115 1600 660 60/96 4 4 20 400/2 + 100\_ 500 1614 250 10 116 710 10 780 13 1554 400/2 100 760 60/96 4 1713 250 10 500 20 117 38 Abort Nav 28 | 1723 3' Begin overlap 610 1805 810 31 860 28 1834

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WOODWARD-CLYDE CONSULTANTS AREA 4 DATE 7/29 - 7/30/78 PAGE 21 EASTERN GULF OF MEXICO OPERATOR RESTA PROJ. NO. 41069A CLIENT BLM MARINE HABITAT SURVEY SIDE SCAN UNIBOOM / SPARKARRAY SEE NOTES SONAR SCALE | SCALE CABLE ECHO VESSEL SPEED SEA REMARKS LINE FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG RANGE OUT SPEED STATE NUMBER (MS) 41 Uniboom w/255 1/2 400/1.7 + 100 510 60/96 1917 200 1.0 500 60 118 recorder\_ 610 2 660 6 710 8 660 19 710 22 760 24 810 90/126 2000 38 2001 4' 7/30/78 360 60/96 4 112 . 0009 250 10 500 20 400/2 + 100 4100 Recorder 27 410 460 44 47 410. 460 53 510 61 51 66 560 Center key 90/126 2 84 660 87 710 0230 102

DATE 7/30/78 PAGE 22 WOODWARD-CLYDE CONSULTANTS AREA 4 EASTERN GULF OF MEXTCO OPERATOR RESTA PROJ. NO. 41069A CLIENT BLM MARINE HABITAT SURVEY SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR SCALE SCALE CABLE ECHO VESSEL SOUNDER SPEED SEA REMARKS LINE LINE SWPS/KEY PRINT RANGE FIX TIME ENERGY GAIN FILTER TVG OUT Et SPEED STATE NUMBER (MS) INTERVAL SCALE 760 90/126 5 41 Uniboom 20 400/2 500 100 111 102 0301 250 10 4100 Recorder Edge kev 101 250 10 60/96 79 710 70 660 66 61.0 61 560 60 510 54 460 13 410 11 1 0531 460 60/96 500 20 400/2 100 1 0551 250 1.0 110 510 560 9 610 18 660 45 760 70 0700 820 84 890 96 940 101 102 0800 500 20 400/2 + 100 630 90/126 5 102 0821 250 1.0 109 60/96 560 88 610 86 abort Nav

DATE 7/30 - 7/31/78 PAGE · 23 WOODWARD-CLYDE CONSULTANTS AREA 4 EASTERN GULF OF MEXICO OPERATOR RESTA PROJ. NO. 41069A CLIENT BLM MARINE HABITAT SURVEY SIDE SCAN UNIBOOM / SPARKARRAY SEE NOTES SONAR SCALE CABLE ECHO VESSEL OUT SOUNDER SPEED SEA REMARKS SCALE FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG RANGE SPEED STATE NUMBER (MS) Continue 510 60/96 10 500 20/140 400/2 100 0943 250 560 82 610 81 560 To Panama City 1134 parts for Nav MES System 450 60/96 600 250/1.5 + 0921 250 | 10 800 100 4100 Recorder 560 6 7/31/78 610 660 710 760 66 810 90 860 96 90/126 98 910 99 102 1037 2' Uniboom\_ 250/1/5 + 100 | 660 | 60/96 | 5 600 102 | 1110 | 250 10 500 255 Recorder 1/2 60 1/4 13 1303 500 20/140 400/1 5 + 100 660 50/96 5 33 | 1346 | 250 | 10 Nav down 37 Restart line

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DATE 7/31 - 8/1/78 OPERATOR RESTA

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PAGE 24 PROJ. NO. 41069A

SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR ECHO VESSEL SOUNDER SPEED SCALE CABLE SEA LINE SCALE REMARKS FIX TIME LINE SWPS/KEY PRINT FILTER TVG RANGE ENERGY GAIN OUT FH STATE NUMBER (MS) SCALE INTERVAL M 4100 Recorder 20/140 400/1.5 + 510 60/96 5 102 500 100 105 1845 250 10 760 101 33 1955 60/96 100 520 500 20/140 400/1 5 + 33 2042 250 104 10 102 2148 100 760 60/96 31 500 20/140 400/1.5 + 102 2200 250 103 10 695 58 33 2313 510 60/96 33 2334 250 10 500 20/140 400/1.5 + 100 102 79 520 8/1/78 102 0045 500 20/140 400/1,5 + 100 510 60/96 102 0100 101 250 10 560 100 610 98 660 94 610 64 33 0212 100 410 50/96 10 500 20/140 400/1.5 + 201 33 0405 250 460 38 510 40 560 44 610 72 660 87 102 0534

WOODWARD-CLYDE CONSULTANTS AREA 4 DATE 3/1/78 PAGE 25 EASTERN GULF OF MEXICO MARINE HABITAT SURVEY CLIENT BLM OPERATOR RESTA PROJ. NO. 41069A SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR SCALE SCALE - LINE CABLE ECHO VESSEL SOUNDER SPEED SEA RANGE FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG REMARKS NUMBER (MS) STATE INTERVAL 202 102 0554 250 10 2 500 20 400/1.5 + 1.00 510 60/96 41 90/126 88 1000 60/96 910 67 860 60 810 760 36 700 0655 0740 250 1.0 500 20 400/1.5 + 100 510 50/96 203 37 560 53 610 70 0901 910 60/96 5 2' 204 70 0923 250 10 500 20 400/1.5 + 100 860 60 810 50 760 45 710 38 660 560 12 510 1 1027

AREA 4

DATE 8/1/78

PAGE 26 OPERATOR RESTA PROJ. NO. 41069A

SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR SCALE SCALE VESSEL CABLE ECHO SEA LINE REMARKS FIX TIME RANGE LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG SOUNDER SPEED NUMBER (MS) PUT STATE INTERVAL 21 460 60/96 20 400/1.5 + 100 205 1053 250 500 10 510 5 560 10 610 19 660 42 710 760 56 810 58 90/126 66 860 70 1210 1060 90/126 500 20/140 400/1.5 + 100 1252 206 70 250 10 960 65 910 52 860 | 60/96 50 810 45 750 39 710 650 SS paper problems 29 610 10 1401 End Area 4

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AREA

CLIENT BIM

DATE 8/2 - 8/3/78

PAGE 27 OPERATOR RESTA PROJ. NO. 41069A

SIDE SCAN UNIBOOM / SPARKARRAY SEE NOTES SONAR SCALE SCALE CABLE ECHO VESSEL. SEA LINE REMARKS TIME FIX LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG range M SOUNDER STATE OUT SPEED NUMBER (MS) INTERVAL SCALE Lead line calibration 1515 15/33 1607 10 300 400/2 100 calm uniboom w/ 201 33 100 255 Recorder 52 1/4 102 1714 15/33 202 102 1723 100 10 3 1/4 300 60 500/2 100 70 calm 33 1831 15/33 calm Add lm to 500/2 100 70 1/4 300 60 203 33 1840 100 10 depth to correct 102 1943 for draft calm Draft corrected 100 70 15/33 100 10 1/4 300 60 500/2 204 102 1953 40 2102 100 70 15/33 5 7 1 2222 300 60 500/2 . 205 33 100 10 3 Ω Hydrophone skipping 45 61 1/4 102 2326 15/33 1/4 500/2 100 70 102 2357 10 3 300 60 206 100 SS record missed 64 paper change 8/3/78 33 0100 70 15/33 60 500/2 100 207 10 3 0 300 0144 100 400 48 600 60 400 66 Paper problems 79

WOODWARD-CLYDE CONSULTANTS EASTERN GULF OF MEXICO

AREA 

DATE 8/3/78

PAGE 28

MARINE HABITAT SURVEY CLIENT OPERATOR PROJ. NO. 41069A BLM RESTA SIDE SCAN UNIBOOM / SPARKARRAY SONAR SEE NOTES SCALE CABLE ECHO SOUNDER SCALE SEA LINE SCALE VESSEL FIX TIME REMARKS LINE SWPS/KEY PRINT FILTER TVG RANGE ENERGY GAIN STATE NUMBER OUT SPEED (MS) INTERVAL 20/140 500/2 15/33 Uniboom w/ 4100 change to 255 recorder down on line. 500/2 15/33 7.1 500/2 15/33 500/2 15/33 15/33 500/2 450/2 15/33 7' 450/2 15/33 7.1 450/2 15/33 450/2\_ 55/33 5 7.1 

WOODWARD-CLYDE CONSULTANTS

AREA 5

8/3/78

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EASTERN GULF OF MEXICO MARINE HABITAT SURVEY

CLIENT BIM

DATE 8

PROJ. NO. 41069A

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LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT Ft	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS
102	70	1859	100	10	3	0.	300	60	450/2	+	100	70	15/33	5	1'	1
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101	_1_	2013	100	10	3	.0	300	60	450/2	+	_100_	70	5/33	5	1'	
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WOODWARD-CLYDE CONSULTANTS

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8/5 - 8/6/78

PAGE 30

EASTERN GULF OF MEXICO MARINE HABITAT SURVEY

CLIENT BLM DATE OPERATOR

RESTA

PROJ. NO. 41069A

				UNIBOOM / SPARKARRAY							SIDE			SEI	E NOTES	
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE	CABLE OUT Ft	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS
101	38	1759	100	10	6	3/4	600	60	400/2	+	100	410	200/31	0 5	1,	Echo Sounder
	35										1					DE 719
	1	1835														Uniboom W 255
102	1	2030	100	10	6	3/4	600	60	250/2	+	100	460	200/31	D 5	7'	
102	17	2030	100	10		3/4	000	- 60	230/2	т.	100	560	2007.31	-		
	38	2105										200				
206	37	0046	100	10	6	3/4	600	60	400/2	+	100	510	200/31	-	7 '	
206	14	10046	100	10	6	3/4	600	60	400/2		100	460	2007.31	1-5-	<u> </u>	
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205	1	0136	100	10	6	3/4	600	60	400/2	+	100	360	200/31	5	1.	
	2									L	-	460			-	
	31		1			ļ				ļ	ļ	51.0		ļ		
	38	0214	1	-	-	-					-		-		-	
204	38	0226	100	10	6	3/4	600	60	400/2	+	100	510	200/3	0.5	1'	
	31					1						460				
	9					1						410				
	1	0309									-	-		-		
203	1	0320	100	10	6	3/4	600	60	400/2	+	100	460	200/3	10 5	1'	
	35	7525	1200	1	<del>ا ٽ</del>	15/-	1500	1-00-	100/2			510				
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AREA 6A

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OPERATOR RESTA PROJ. NO. 41069A

DATE 8/6/78 PAGE 31

SIDE SCAN UNIBOOM / SPARKARRAY SEE NOTES SONAR CABLE ECHO VESSEL SPEED SCALE SCALE SCALE SEA FIX TIME REMARKS LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG RANGE NUMBER (MS) STATE INTERVAL M 100 1' 202 0408 100 10 3/4 600 400/2 510 200/310 5 460 33 410 1 0450 100 510 200/310 5 3/4 600 60 400/2 + 201 1 0501 100 10 38 0534

AREA 6B

DATE \_

8/6/78

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CLIENT BLM OPERATOR RESTA PROJ. NO. 41069A SIDE SCAN UNIBOOM / SPARKARRAY SEE NOTES SONAR SCALE CABLE SOUNDER SPEED LINE SCALE SEA FIX TIME LINE SWPS/KEY PRINT REMARKS FILTER TVG RANGE ENERGY GAIN NUMBER (MS) OUT STATE 4 INTERVAL M 3/4 60 400/2 102 0601 100 10 600 200/310 5 100 550 71 8 610 38 0651 101 610 200/310 5 1047 100 10 3/4 600 60 400/2 100 660 710 5 1123 38 1' 1235 60 400/2 100 560 200/310 5 205 100 10 600 610 4 11 660 38 1 1314 100 610 200/310 5 21 38 1345 100 10 600 60 400/2 | + 204 660 36 1424 203 1455 100 10 6 3/4 600 400/2 100 610 200/310 5 15 38 1538 400/2 100 660 200/370 5 202 38 1549 100 10 6 600 60 3/4 1625 200/310 5 3/4 100 560 2' 201 1647 100 6 600 60 400/2 20

AREA 6C

CLIENT BLM

OPERATOR RESTA PROJ. NO. 41069A

DATE 8/6 - 8/7/78 PAGE 33

SIDE SCAN UNIBOOM / SPARKARRAY SEE NOTES SONAR SCALE CABLE ECHO SOUNDER VESSEL SEA LINE SCALE TIME LINE SWPS/KEY PRINT ENERGY GAIN REMARKS FIX FILTER TVG RANGE STATE NUMBER SPEED (MS) SCALE 200/2 100 650 200/310 5 41 2129 600 60 206 100 10 710 14 300/410 61 760 63 70 2245 2301 100 10 600 60 200/2 100 710 B00/410 205 70 69 760 200/310 62 400/2 12 660 0006 610 200/310 5 204 0019 | 100 | 10 600 | 60 | 400/2 100 660 710 760 1.4 710 760 810 64 300/410 66 70 0131 510 300/410 4 60 400/2 100 203 0145 100 10 600 610 200/310 67 560 460 27 410 4 0317

AREA 6C

8/7/78

DATE

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CLIENT BIM

OPERATOR RESTA

PROJ. NO. 41069A

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LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	range M	CABLE OUT Ft	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS
202	1	0330	100	10	6	1	600	60	400/2	+	100		200/31	0 5	51	
	3											610	1			
	5			-	1							710				
	27											760				
	64			1					1			810				
	70	0434							1							
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201	70	0533	100	10	6	1	600	60	400/2	+	100	460	200/31	0 4	5.'	
	68	1	1		-				1007			360	-			
	66			1	1							410				
	45		1		-						1	360	1		6'	
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	1	0723	-		-	ļ	-				1	1				
		0723	1		-				-	-	1	1	1			
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8/7/78

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EASTERN GULF OF MEXICO MARINE HABITAT SURVEY

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AREA

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PROJ. NO. 41069A

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LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT Ft	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS
201	1	1022	100	10	6	3/4	600	60	400/2	+	100	460	200/31	5	6'	
	3								1			510				
	70	1134														
202	70	1155	100	10	6	3/4	600	60	400/2	+	100	410	200/31	5	61	
	33							7.4	1007			460	1			
	30			1			1					410				
	23											460	1			
	1	1304						-					<u> </u>			
203	1	1316	100	10	6	3/4	600	60	400/2	+	100	460	200/3	0.5	4'	
	36	1		-					1.00/1		1	410	2007.5			
	38		-		T		1				1	460				
	70	1435		1												
204	70	1449	100	10	6	3/4	600	60	100/2	+	100	460	200/3	10_5	4'	
	67				1			1	100			410	200, 2			*
	42	1										460		Total Park		
	41		1									510	1			
	20		-									460		1		
	1	1606											-	-	-	
205	1	1647	100	1.0	6	3/4	600	60	400/2	±	100	410	200/3	10_5	4'	
	70	1810			-		-		-		-	-	-	-		
206	70	1829	100	10	. 6	3/4	600	60	400/2	±_	100	560	200/3	10 5	4'	
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AREA 7

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DATE 8/7 - 8/8/78 PAGE 36

OPERATOR RESTA PROJ. NO. 41069A SIDE SCAN UNIBOOM / SPARKARRAY SEE NOTES SONAR SCALE CABLE SOUNDER SPEED SEA LINE SCALE TIME LINE SWPS/KEY PRINT ENERGY GAIN RANGE REMARKS FILTER TVG NUMBER (MS) 맺 STATE INTERVAL 207 1959 100 10 3/4 200/310 5 600 60 400/2 100 410 41 27 460 51 510 70 2111 41 208 70 2123 100 10 3/4 600 60 400/2 100 560 200/310 5 38 510 1 2235 209 2248 100 10 3/4 600 60 400/2 100 200/310 5 410 21 460 70 0002 100 560 200/310 5 3' 210 70 0014 100 1.10 6 3/4 600 60 400/2 63 510 51 460 410 41 27 360 0140 211 100 460 200/310 5 1 0153 100 10 3/4 600 60 400/2 + 4 510 29 560 610 46 70 0300

AREA 7

DATE

8/8/78

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CLIENT BIM

OPERATOR RESTA PROJ. NO. 41069A SIDE SCAN UNIBOOM / SPARKARRAY SEE NOTES SONAR SCALE ECHO SOUNDER SCALE LINE SCALE CABLE VESSEL SEA FIX TIME LINE SWPS/KEY PRINT REMARKS FILTER TVG RANGE ENERGY GAIN NUMBER SPEED STATE (MS) INTERVAL 0315 100 212 70 460 200/310 31 10 3/4 600 60 400/2 100 68 410 360 12 310 0452 104 70 0540 100 10 6 3/4 600 400/2 100 200/310 4 410 31 68 460 0655 103 0715 100 10 6 3/4 600 60 400/2 1.00 410 200/310 4 31 460 9 70 0833 200/310 4 4' 100 560 102 70 0852 100 10 6. 3/4 600 40 400/2 30 0958 101 1021 100 10 6 3/4 600 40 400/2 + 100 410 200/31b 4 4' 460 25 30 510 59 560 5 60 70 1139

AREA 6C CLIENT BLM

DATE 8/8/78

PAGE 38 OPERATOR RESTA PROJ. NO. 41069A

SIDE SCAN UNIBOOM / SPARKARRAY SEE NOTES SONAR SCALE ECHO VESSEL SOUNDER SPEED CABLE SEA LINE SCALE FIX TIME LINE SWPS/KEY PRINT RANGE REMARKS FILTER TVG ENERGY GAIN STATE NUMBER OHT. (MS) INTERVAL 31 1357 100 104 38 600 60 400/2 100 760 200/31b 5 36 810 1431 31 103 1455 100 510 k00/31h 10 600 60 400/2 + 7.00 5 560 610 10 560 11 510 12 460 13 410 26 460 38 1548 100 810 200/310 5 1611 100 102 38 10 6 600 60 400/2 38 860 19 810 1646 200/310 5 100 560 101 1710 1100 10 600 60 400/2 510 4 610 660 10 710 18 300/41b 33 760\_ 34 38 1749

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DATE 8/8 - 8/9/78

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EASTERN GULF OF MEXICO MARINE HABITAT SURVEY

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BIM

OPERATOR

PROJ. NO. 41069A

					UNI	BOOM / S	PARKAR	RAY				SCAN NAR			SEE	NOTES
· LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	range M	CABLE OUT Ft.	ECHO SOUNCER SCALE	VESSEL SPEED	SE A STATE	REMARKS
101	1	2225	100	10	6	1/2	600	40	400/2	+	100	310	100/21	0 5	2'	
	55											360				
	63					3/4										
	70	2344										ļ	-		ļ	
102	70	0003	100	10	6	1/2	600	40	400/2	+	100	310	100/21	5	2'	
102	68	0003	100	10	1 -	1/2	000	40	400/2		100	360	100/21			
	20		1						-		1	300	1			Side Scan down
	2.4	0303	1	1								310	1			Side Scan operationa
	1	0330														
103	1	0351	100	10	6	1/2	600	40	400/2	+	100	310	100/2	10 5	2'	
105	2	0331	100	10	1	1/2	000	-40	1400/2		100	360	1.00/2	10 5	-4-	
	70	0456										300			-	
104	70	0519	100	10	6	1/2	600	40	400/2	+	100	360	100/2	10 5	2'	
104	1	0633	100	10	- 6	1/2	600	40	400/2		100	360	1			
201	1	0658	100	10	6	1/2	600	40	400/2	+	100	410	100/2	10 6	2'	
201	70	0756	100	10	- 0	1/2	600	40	400/2							
202	70	0807	100	10	6	1/2	600	40	400/2	-	100	410	100/2	10 5	2'	
202	69	10007	100	1-10	-	1/6	- 600	40	- 400/2			360				
	1	0920						-	1			1		-		
203	1	0935	100	10	. 6	1/2	600	40	100/2	+	1.00	41.0	100/2	10 6	2'	
205	70	1030	100	10		11/2	1.000	1	10022		1	1	1.557.2	V		
204	70	1043	100	10	6	1/2	600	40	400/2	+	100	360	100/2	10 5	31	
204	1	11152	100			11/6	1000	- 4U	100/2	<del> </del>	100	700	1	1		

AREA 8 DATE MOODWARD-CLYDE CONSULTANTS 8/9/78 PAGE 40 EASTERN GULF OF MEXICO MARINE HABITAT SURVEY OPERATOR RESTA PROJ. NO. 41069A CLIENT BIM SIDE SCAN SEE NOTES UNIBOOM / SPARKARRAY SONAR SCALE CABLE ECHO VESSEL OUT SOUNDER SPEED LINE SCALE SEA RANGE FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG REMARKS NUMBER STATE (MS) INTERVAL 205 İ 100/210 5 1204 100 10 1/2 600 40 400/2 + 100 410 31 9 360 12 310 360 63 70 1321 206 70 1342 100 10 6 1/2 600 40 400/2 + 100 360 100/210 5 66 310 41 250 1502 207 1514 | 100 1/2 100/210 5 21 10 600 40 400/2 100 250 310 5 360 6 10 410 20 360 1626 70 208 1746 1 100 10 1/2 600 40 400/2 100 360 100/210 5 17 310 1908 460 100/210 5 100 209 1946 1/2 600 40 400/2 + 70 100 10 2048 6 1/2 600 40 400/2 + 100 260 100/210 4 11 210 2147 | 100 | 10 10 310 70 2302

AREA 8 DATE 8/9 - 8/10/78 PAGE 41 WOODWARD-CLYDE CONSULTANTS EASTERN GULF OF MEXICO MARINE HABITAT SURVEY CLIENT BIM OPERATOR RESTA PROJ. NO. 41069A SIDE SCAN UNIBOOM / SPARKARRAY SEE NOTES SONAR LINE SCALE SCALE CABLE ECHO VESSEL SPEED SCALE SEA REMARKS TIME RANGE OUT FIX LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG NUMBER (MS) STATE INTERVAL 211 2315 100 10 1/2 600 40 400/2 100 460 100/210 6 11 410 66 460 0015 40 400/2 + 100 360 100/210 5 212 1 0026 100 10 1/2 600 70 0139

37.56

AREA

9 DATE 8/10 - 8/11/78 PAGE 42

CLIENT BLM OPERATOR RESTA PROJ. NO. 41069A SIDE SCAN UNIBOOM / SPARKARRAY SEE NOTES SONAR SCALE SOUNDER SPEED LINE SCALE CABLE SEA REMARKS FIX TIME LINE SWPS/KEY PRINT RANGE ENERGY GAIN FILTER TVG NUMBER (MS) STATE INTERVAL M 250 100/210 5 201 2028 100 1/2 400/2 100 10 600 40 83 310 2213 310 100/210 5 1' 202 102 1/2 600 400/2 2224 | 100 | 10 40 100 97 360. 310 37 0007 310 100/210 5 203 0021 100 | 10 1/2 600 40 400/2 100 102 0208 0221 400/2 100 310 100/210 5 204 102 100 10 6 1/2 600 40 100 335 310 20 285 12 0405 400/2 + 100 310 1100/210 4 21 0417 100 10 1/2 600 40 205 69 335 360 84 102 0601 310 1.00/210 5 100 1/2 40 400/2 + 100 206 102 0612 10 6 600 360 84 310 11 0759

1	(OODWAI	W-CLYI	DE CON	SULTAN	rs		AREA	9	) -			DATE	8/1	1/78		PAGE 43
1	ASTER ARINE	N GULF HABITA	OF ME	XICO VEY		CL	IENT		Μ .			OPERA	TOR	RESTA		PROJ. NO. 41069A
***************************************					ואט	BOOM / S	PARKAR	RAY			SIDE	SCAN			SEE	NOTES
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE	CABLE	ECHO SOUNCER SCALE	VESSEL SPEED	SEA STATE	REMARKS
106	38	0943	100	10	6	1/2	600	40	400/2	+	100	310	100/21	0 5	4'	
	35											360				
	1	1019														
											l					
105	1_	1037	100	10	6	1/2	600	40	400/2		100		100/20	5 5	31	
	2			ļ	ļ							360				
	7 38	1117			ļ							310				
		111/	8	-												
207	33	1130	100	10	6	1/2	600	40	400/2	+	100	410	100/2	5 5	3'	
201	102	1235	100	1 10		1/2	000	-40	400/2		100	13.0	100/2	1		
			1	1	1						1		1			
208	102	1251	100	10	6	1/2	600	40	400/2	+	100	310	100/2	5 4	2'	
	98			-	1	1	1					285				
	86										1	260				
	33	1413												1	ļ	
													1			
209	33	1533	100	10	6	1/2	600	40	400/2	+	100	360	100/2	5 5	3,	
	102	1643							-		1	-	-			
											<b>-</b>			<u> </u>	<del> </del>	
210	102	1656	100	1.0	6	1/2	600	40	400/2	+	100	360	100/2	15 5	3'	
	100		ļ				-			ļ	1	335_		·		
	33	1809	ļ				-					-	-	1.	-	
211	33	1834	100	10	6	1/2	600	40	400/2	+	100	310	1.00/20	05 5	1'	
-644-	74	12034	100	1-10	10-			1-70	10072	'	1-00-	360	1			
	102	1939	1	-	-	1	1	-	1		Ī.					
	102	1235	1	1	1	1	-	-								
212	102	1951	100	10	6	1/2	600	40	400/2	+	100	360	100/20	5 5	1'	
	33	2102							1		-1		4	1		

 WOODWARD-CLYDE CONSULTANTS
 AREA
 9
 DATE
 8/11 - 8/12/78
 PAGE
 44

 EASTERN GULF OF MEXICO

 MARINE HABITAT SURVEY
 CLIENT
 BIM
 OPERATOR
 RESTA
 PROJ. NO. 41069A

					ואט	BOOM / 5	PARKAR	RAY			SIDE	SCAN IAR			SE	E NOTES
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	range M	CABLE	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS
104	70	2128	100	10	6	1/2	600	40	400/2	+	100	360	100/21	5	1'	
	1	2235														
103	1	2256	100	10	6	1/2	600	40	400/2	+	100	360	100/2	0 5	1'	
	7										1	310	1	1		
	70	0002	f										1	<u></u>		
213	65	0023	100	10	6	1/2	600	40	400/2	+	1.00	310	100/2	0 5	1'	
	102	0104														
			and the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of th								1					
214	102	0115	100	10	6	1/2	600	40	400/2	+	100	360-	100/2	10 5	1'	
	65	0151									1		1			
			1			1			1		i			1	-	
215	65	0203	100	10	6	1/2	600	40	400/2	+	100	310	100/2	10 5	1'-	
	102	0243	il.	1												
			Í								1					
216	102	0254	100	10	6	1/2	600	40	400/2	+	100	360	100/2	10 5	1'	
	65	0331	1										-	1		
											1				-	
217	65	0342	100	10	6	1/2	600	40	400/2	+	100	360	100/2	10 5	1'	
	102	0420						. i		l	1					
											-			1		
218	102	0431	100	10	6	1/2	600	40	400/2	+	100	360	100/2	10 5	1'	
	65	0508	6							ļ		-		-		
			1			_	_			-					11.	
102	102	0535	100	10	6	1/2	600	40	400/2	ļ±	100	360	1.00/2	1b_4	1	
	1 1	0719	ļ		_					-			-			
	-	-	1	-	-					-	-1		-	-	1'	
101	1 1	0739	100	10	6	1/2	600	40	400/2	1 +	100	360	_100/2	10_5_	- <del> </del>	

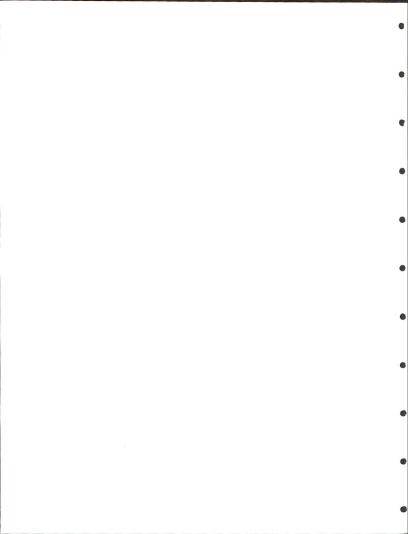
WOODWARD-CLYDE CONSULTANTS AREA 10 DATE 8/12 - 8/13/78 PAGE 45 EASTERN GULF OF MEXICO

MARINE HABITAT SURVEY

0837

CLIENT BIM OPERATOR RESTA PROJ. NO. 41069A

SIDE SCAN UNIBOOM / SPARKARRAY SEE NOTES SONAR SCALE | SCALE SOUNDER SPEED LINE CABLE SEA REMARKS TIME (MS) INTERVAL SWPS/KEY PRINT ENERGY FILTER RANGE NUMBER GAIN TVG STATE 201 70 1732 100 10 6 1/2 600 60 400/2 100 410 100/216 5 7.1 1843 203 1857 600 60 400/2 1.00/210 5 1' 100 | 10 6 1/2 100 310 70 2003 205 70 2018 100 10 1/2 600 60 400/2 100 360 100/210 5 11 46 410 2128 207 2142 100 10 6 1/2 600 60 400/2 + 100 360 100/210 5 1 - 48. 2247 70 209 70 2303 100 10 1/2 600 400/2 + 100 360 100/210 5 1 6 60 0011 211 0025 100 10 6 1/2 100/210 5 600 60 400/2 100 410 59 435 460 61 70 0129 400/2 + 100 | 410 | 100/210 5 213 0147 3/4 70 100 10 6 600 60 55 385 0256 100 385 100/210 5 11' 215 0312 100 10 3/4 600 60 400/2 + 16 410 Navigation down 30 0.335 410 Navigation operational 28

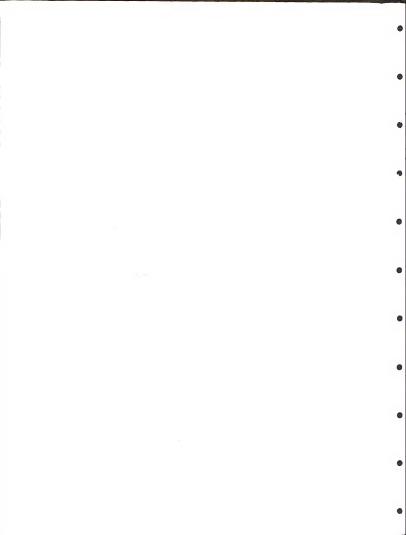




						'										
					rs .		AREA		10			DATE	8/	1.3/78		PAGE 46
1	EASTER MARINE	N CULF HABITA	OF ME AT SUR	VEY XICO		CI	LIENT_	F	MIE			OPERA	TOR	RESTA		PROJ. NO. 41069A
					UN!	B00M/	SPARKAR	RAY		***********		SCAN			SEE	E NOTES
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	range M	CABLE OUT EH	ECHO SOUNGER SCALE	VESSEL SPEED	SEA STATE	REMARKS
217	70	0858	100	10	6	3/4	600	60	400/2	+	100	460	100/21	0 5	1'	
	1	1002			1	1										
104	102	1054	100	10	6	1/2	600	60	400/2	+	100	410	100/21	D 5	1'	
	97								1			360				
	_1	1250	ļ	-							1		ļ	ļ		
100		2220	100			1	600		400/2	+	100	360	100/21	0 5	1'	<u> </u>
103	102	1310	T00	10	6	1/2	600	60	400/2	+	100	360	100/21	V 2	1.	
	102	1446	ļ						-		<del> </del>					<del>                                     </del>
102	102	1505	100	10	6	1/2	600	60	400/2	+	100	410	100/21	0 5	1'	
202	99	1303	100	1		17-			1-00, -			360		-		
	95		-						-		-	385	-	1		
	94	1	1	1	-		-	1	-		1	410	1		1	
	83	1	B	1	1	3/4				1	1				1	
	11		1		1	1/2		-					and the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of th	200		
	1	1645											1			
				1		1				1		1		1	1	
101	1	1706	100	10	6	1/2	600	60	400/2	+	100	410	100/2	10 5	2'	
	102	1838						1			į					
218	70	1935	100	10	6	1/2	600	60	400/2	+	100	360	100/2	10 5	1'	
	1	2045		1									-		-	
								-		-				J	-	
216	1	2103	100	10	6	1/2	600	60	400/2	+	100	360	100/2	10 5	1'	
	28	-	ļ									410		ļ	ļ	
	70	2205	l			-										

AREA 10 DATE 8/13 - 8/14/78 PAGE 47

CLIENT BIM OPERATOR RESTA PROJ. NO. 41069A SIDE SCAN UNIBOOM / SPARKARRAY SEE NOTES SONAR SCALE LINE SCALE CABLE ECHO VESSEL SPEED SCALE SEA REMARKS FIX TIME LINE SWPS/KEY PRINT ENERGY GAIN FILTER TVG RANGE NUMBER (MS) OUT STATE INTERVAL 214 2228 100 10 1/2 600 | 60 400/2 100/21h 4 ٦, 100 360 62 410 2336 212 1 0030 100 1/2 60 400/2 + 100 410 100/210 5 10 600 70 0133 1/2 210 70 0156 400/2 + 100 410 100/210 5 100 10 600 60 68 3/4 0308 208 0324 100 10 3/4 100/2 + 410 100/210 5 1' 600 60 1 100 70 0433 206 70 400/2 + 0450 100 10 3/4 600 60 1 100 410 100/270 5 1 1' 19 1/2 0555 204 0613 | 100 10 1/2 600 400/2 + 100 360 100/210 5 1' 60 70 0718 400/2 + 100 410 100/210 5 1' 202 1/2 600 0752 100 10 6 60 0859

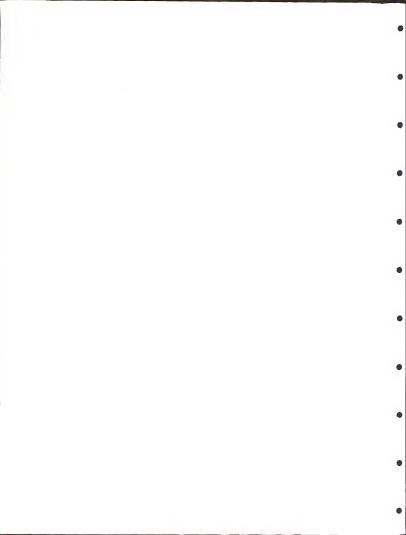


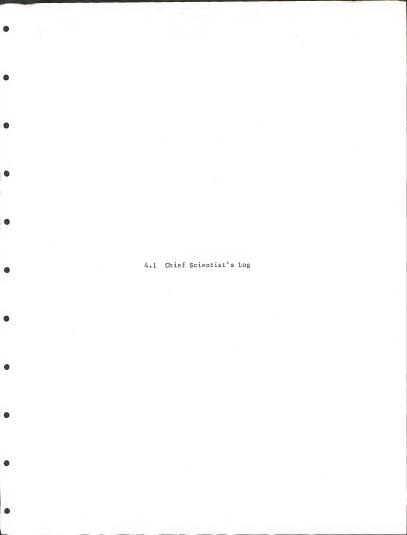
## 4.0 GROUND TRUTH SURVEY REPORTS

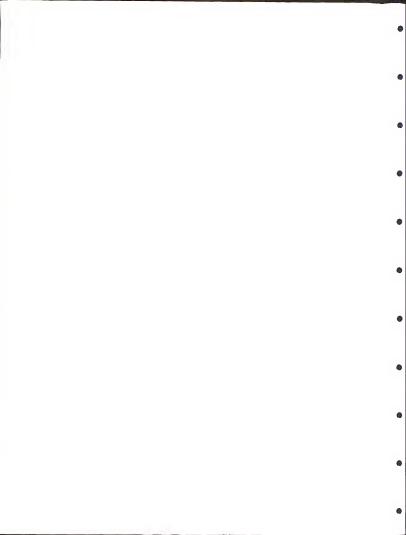
These are four logs which summarize the ground truth survey cruise.

Chief Scientist's Log (Geomarine Field Report) Time Allotment Summary Daily Field Report Video Log

The Chief Scientists Log is a summary of the days events. It is kept on a time basis for a 24 hour day. The Time Allotment Summary is a table which summarizes the time spent on various work tasks. It is derived directly from the Chief Scientists Log. The Daily Field Report lists the crew, equipment, and subcontractors employed on the project for each day. The Video Log is intended primarily for use as a supplement to the voice track on the video tapes. It is a chronological record of events while the underwater television system was being towed.







## WOODWARD-CLYDE CONSULTANTS GEOMARINE FIELD LOG

				Project	41069A
Client	BLM	Rep	None	Date	8/15/78
Work Area	Eastern Gulf	of Mexico		Supervisor	Beer
m.'					
Time					
0000	In Port, St.	Petersburg			
0800	Planning mee	tings for tel	evision cruise		
1330	Continental	Shelf Associa	tes arrive with t	elevision and cam	era
	system				
1730	Mobilization	complete			
2000	Awaiting span	re parts for	navigation system	1	
2400	Ready to depa	ert St. Peter	sburg		
4					
				***************************************	
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	*				
			<del></del>	***	
			WCC	Clie	nt

## WOODWARD-CLYDE CONSULTANTS GEOMARINE FIELD LOG

	•	Project 4106	59A
Client	BLM Rep Jim Barkaloo	Date 8-16-7	78
Work Area	Eastern Gulf of Mexico	Supervisor Bennir	ıgton
m.*			
Time:			
0012	Leave St. Petersburg dock		
0215	Navigation calibration @ pier light		
0830	Steering out on vessel		
0930	Under way again		
1030	Spot radar reflector Area 9 ("Tie into ex	isting buoy")	
	Seas ~ 1 ft. running from SE Current fro	n NE	
1230	Head to line 201, S.P. 40 for camera deplo	ment	
1255	At line 201 S.P. 40 Turn to 180 heading,	cut engines.	
1305	Begin camera deployment		
1335	Camera at bottom		
1418	Camera off bottom		
1430	Blew fuse on winch in bringin up cameras		
1500	On board		
≃1600	Unload camera, adjust and reload camera de	ployed & drifting	
1658	Camera on board Unload and develop film	Select camera calibration	n n
1900	Camera over board		
1910	Engage engines enroute to get on line 201	S.P. 16-21	
1959	On line 201, head west		
2002	Lower camera		
2011	Begin monitoring, shot point 3		
2056	Pass shot point 27		
continue			

Project 41069A

	Client	BLM	Rep	Jim Barkaloo	)	Date	8-16-78
)	Work Area	Eastern Gulf of Mexico				Supervisor	Bennington
	Time:						
	2100	Camera off bottom		•			
)							
	2115	Camera aboard					
	2220	Course to Area 7					
,							
			-				
	-	*					· · · · · · · · · · · · · · · · · · ·
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		to appropriate and proper for a final month and the attribute of the order one company and define at 10 to	~				
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					WCC	Cli	ent

			110 1000
Client	BLM	Rep Jim Barkaloo	Date 8-17-78
Work Area	Eastern Gulf of	Mexico	Supervisor Bennington
Time			
0220	Arrivo Aro	a 7, deploy buoy	
0320			
0402	Fix on buo		
0405	Shut down,	drifting	
0950	Camera in	water, off bottom	
1007	Begin move	to line 205	
1028	On line 20	5. Heading east	
1047	Begin reco	rding at S.P. 55	
1230	Stop engin	es. S.P. 0 Camera off bo	ttom
1241	Camera abo	ard	
1250	. Begin run	to 6A	
1415	Arrive Are	a 6A	
1509	Camera ove	r side at shot point -3 on	a line perpendicular to line 101
	about 50 m	south and parallel to shot	point line 5.
1538	Begin tran	sect at Shot Point 0	
1558	End transe	ct at Shot Point 10	
1601	Camera off	bottom. Head to 2nd trans	ect of Area 6A
1714	. Begin tran	sect west to east along lin	e perpendicular to line 101 of
	Area 6A an	d about 50 m north and para	llel to shot point line 32.
	Begin tow	at a shop point 0	
1728	End of run	at shot pt. 11 Turn 180°	Camera in tow
1756	Head E to	W along same line from pt l	l to pt 0
continue			
			Client

				FIUJUL	HI000A
Client	BIM	Rep Jim Ba	rkaloo	Date	8-17-78
Work Area	Eastern Gulf	of Mexico		Superviso	r Bennington
Time					
. 1820	End trans	sect. Camera off botto	IT		
1835			to Area 6B		
1915	Arrive Ar				
2002	Camera ov		cet on line		
2050		ansect perpendicular to		between and pa	rallel to
		nt line 25 and 26 rurni			
2121	End trans	sect. Come around 180°	>		
2136	Begin tra	ansect along shot point	: line 25 runni	ng W → E .	
2150	Abort tra	ansect. Off course			And and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second seco
2158	. Begin mar	neuver to turn 180° and	get on east e	nd of shot poi	nt line 25
2219	Regin tra	ensect along shot point	line 25 runni	ng F = W aggre	es lino 101
2243		sect line Camera off		IN D. Havers	88 THE 101
2258	Camera on	n deck			
2302	Head to P	Area 7 for land counts			-
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		Project 41069A
Client	BLM Rep Jim Barkaloo	Date 8-18-78
Work Area	Eastern Gulf of Mexico	. Supervisor Bennington
Time		
. 0001	Enroute L/C buoy #7	
0103	Arrive buoy	
0117	Enroute Area #9	
0700	Siminole station off air	
0840 .	Siminole station on air Continue man	neuver to Area 9
1000	Seas swells < 1 ft. S $\rightarrow$ N wind E $\rightarrow$	W
1000	Fix on Area 9 buoy	
	Swells < 1 ft. $S \rightarrow N$ Wind $E \rightarrow W$	:
1002	Camera Buoy over side	
1012	Camera over side	*
1106	Begin transect fixes running W -> E on	a line 250' N of line 201 from
	shot pts. 22-15.	
1118	End transect line at shot pt. line 15	. Increase speed and maneuver to
	line 100' S of line 201 along shot pts	s 8-0.
1128	Begin transect of Southern line W -> E.	
1143	End W $\rightarrow$ E transect and make 180 $^{\circ}$ turn	to rerun transect.
1203	Begin E → W transect along line 0 to	100 ft. south of line 201. Run
	shot pt. 0 to 8 Running slightly of	f course so transect meanders
1230	End transect E → W in Area 9 Camera	off bottom
1240	Camera & sled aboard Pick up camera	buoy
1303	Enroute to Land Count Buoy	
continue		
	,	WCC Client

		Project 41069A
Client	BLM Rep Jim Barkaloo	Date 8/18/78
Work Area	Eastern Gulf of Mexico	Supervisor Bennington
Time:		
1312	Pick up L/C Buoy	
1325	Enroute to Calibration check at Old Quar	rantine Pier Lite
2029	Calibration check at Old Quarantine Pier	Lite OK
2030	Enroute Port Manatee	
2205	Arrive Port Manatee dock	
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				Project	41069A
Client	BIM	Rep Jim B	arkaloo	Date	8-19-73
Work Area _	Eastern Gulf o	f Mexico		Supervisor	Bennington
m t					
Time:					
0000	At Port Mana	atee dock			
1145	Leave Port N	Manatee dock en ro	ute to Panama City		
2359	Enroute Pana	ama City			
province and the secondaries					
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	•	Project _	41069A
Client B	REP Jim Barkaloo	Date	8-20-78
Work Area E	astern Gulf of Mexico	Superviso	r Bennington
Time			
0000	Enroute Panama City		
	TIME ZONE CHANGE TO CDT		
1430	Arrive Panama City dock	,	
1500	BLM observer (Jim Barkaloo) leaves ship		
1700	BIM observer (Melissa Smith) aboard		
1700	Compressor and winch arrive from Louisiana		
1930	Computer arrives. Not functional		
2359	At Panama City dock		
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					Project	41069A
Client	BLM	Rep	Mellissa Smi	th	Date	8-21-78
Work Area	Eastern Gulf o	f Mexico			Superviso	or Bennington
Time						
1130	Calculator	for navigtor	s arrive. No	computer.		
1225	Leave Pana	ma City dock	en route to N	avy buoy for	r navigation	calibration.
1330	Navigation	calibration	at Navy buoy	-		
1500	Discover e	rror in calib	ration, retur	n to buoy		
1520 -	Calibration	n at buoy, he	ad for Area 4			
1530	Standing by	y, no station	signal for n	avigation.		
1800	Wind and s	eas picking u	p. Choppy 1-	3 ft. N → S	. White car	os
1835	Navigation	signal, reca	librate and h	ead for Are	a 4	
2330	Drop lane	count Buoy	in Area 4			
2359	Secure for	night in Are	a 4			
			Man and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state			
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				Project	
Client	BLM	Rep Mellissa	Smith	Date	8-22-78
Work Area	Eastern Gulf	of Mexico		Supervis	or Bennington
Time					
0000	Secured	for night in Area 4	•		
0600	Seas cho	oppy, l ft. SE → NW Wir	nd SE → NW Se	earch for Ly	'C Buoy
	Navigat	ion signal weak			
0700	Locate 1	buoy, deploy 2nd L/C Buoy	w/radar reflec	etor	
0950	Slave st	tation transmitting			
1000	Calibrat	te navigation at L/C Buoy	Seas 1 ft.	E≯W W	ind E + W
1025	Navigat	ion lattice run			
1051	Begin t	ransect with fathometer	Only along W	E line ha	f way between
	shot po:	int lines 21 and 22 in Are	a 4 and perper	ndicular to	line 114
1110	Rerun E	→ M			
1131	Camera o	over side			
1222	Begin ca	amera transect run, $W \rightarrow E$	half way betwe	en shot po	int lines 21
	and 22,	line 114 in Area 4			~
1248	End came	era transect Camera in 7	'OW		
1333	Begin tı	ransect W → E along shot p	oint line 32,	line	14 in Area 4
1345	Hang up	camer momentarily on outc	rop (≃20 ft)		
1409	Camera a	and bent fram on deck			
1423	Repair v	while enroute to line 108	of Area 4		
1520	Frame f	ixed, TV system operatable			
1551	Camera o	over side	makanini matanini kati kiti kiti matanini matani		
1641	Begin t	ransect 60 m Nof line 10	8, Area 4, rur	ning N → S	
continue					
			WCC		Client

Project 41069A 8-22-78 BLM Client Rep Mellissa Smith Supervisor Bennington Work Area Eastern Gulf of Mexico Time Camera transect end 1806 1823 Camera system on deck Camera in water at line 104 1953 Begin transect N → S along line 60 m E of line 104 in Area 4 2023 2109 End transect 2128 Camera system on deck Head for 4C buoys in Area 4, line 114 2128 Calibration at L/C buoy 2245 2255 Retrieve B07s buoys 2258 Head for Area 3 2330 Stop to work on clutch Underway 2340 2400 Enroute to Area 3

WCC \_\_\_\_\_Client \_\_\_\_

				Project	41069A
Client	BLM	Rep Mellissa	Smith	Date	8-23-78
Work Area	Eastern Gul	f of Mexico		Supervis	or Bennington
Time					
0000		to Area 3			
0915 ·	Arrive p	latform in Area 3 for nav	rigation clai	bration	
0938	Head for	north end of Area 3 Sv	vells 3-4 ft.	E → W wh	itecaps
	wind, gus	sty E → W			
1030	Electric	ity off while work on boa	at		-
1050	Arrive no	orth end Area 3			
1100	Electric	ity on		,	
1130	Deploy s	ide scan sonar fish			
1135	Deploy sp	parker; malfunction on bo	pard to fix.		
1140	Deploy sp	parker again			
1601	Begin E -	→ W transect (Geophysical	) of line 20	)8 Area 3	
1715	End trans	sect			
1749	Begin W -	E transect of line 207			
1753	Abort tra	ansect & retrieve side so	an sonar fis	sh .	
1810	Deploy f	ish			
1834	Begin tra	ansect W → E of line 207	Winds les	ss, W → E Se	as 3-4 ft swells,
	less chor	opy ENE→ WSW			
2000	End line	207			
2125	Begin lir	ne 206, Area 3, E → W poi	nts 1-38		
2205	End line	206			
2239	Begin Arc	ea 3 line 205, $W \rightarrow E$ pts.	38-1		
continue					
			wcc		Client

		Project 41069A
Client	BLM Rep Mellissa Smith	Date 8-23-78
Work Area	Eastern Gulf of Mexico	Supervisor Bennington
Time		
2326	End line 205	
2345	Begin Area 3 line 204, E → W pts 1-70	
2359	Running Geophysical lines	· a
and the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of th	· · · · · · · · · · · · · · · · · · ·	•
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	WCC	Client

#### GEOMARINE FIELD LOG

Rep Mollissa Smith Date 8-24-78

Client BLM

Project 41069A

K 70.00	stern Gulf of Mexico	Supervisor Bennington
Time		8 •
0000	Running geophysical work on Area 3 line 204	E → W
0017	End line 204	
0153	Begin Area 3 line 203, W $\rightarrow$ E pts 70 - 1	
0314	End line 203	
0349	Begin area 3 line 102 N → S pts 33-134	
0528	End line 201	
0544	Begin Area 3 line 103 S → N pts 134-33	
≃0723	End line 103	
0812	Begin Area 3 line 104 N → S pts 33-134	
1000	End line 104	
1054	Begin Area 3 line 107 S → N pts 134-97	
1141	End line 107	
1230	Recalibrate navigation at Chevron platform	
1233	Head back to Area .	
1240	Seas $E \rightarrow W$ 4-6 ft., wind $E \rightarrow W$	
1307	Begin Area 3, line 109 N → S points 97-134	
1400	End line	
1423	Begin Area 3, line lll, S → N points 134-97	
1512	End line	
1530	Begin Area 3, line 112, N → S points 97-134	
1545	Seas 3-5 ft. E → W Winds E → W	
continue		
	WCC	Client

Client BIM Rep Mellissa Smith Date 8-24-71 Work Area Eastern Gulf of Mexico Supervisor Bennin  Time 1619 End line 1654 Begin Area 3 line 110 S + N points 134-97 1739 End line 1801 Begin line 108 Area 3, N → S points 97-134 1845 Seas 3-5 ft E → W Winds E → W 1851 End line 1900 End geophysical work Bring up sparker & side scan fish 1915 Sparker & fish aboard Head for Chevron platform for navigation	7
Work Area         Eastern Gulf of Mexico         Supervisor Benning           Time         1619         End line           1654         Begin Area 3 line 110 S + N points 134-97           1739         End line           1801         Begin line 108 Area 3, N → S points 97-134           1845         Seas 3-5 ft E + W Winds E + W           1851         End line           1900         End geophysical work Bring up sparker & side scan fish	
1619 End line  1654 Begin Area 3 line 110 S → N points 134-97  1739 End line  1801 Begin line 108 Area 3, N → S points 97-134  1845 Seas 3-5 ft E → W Winds E → W  1851 End line  1900 End geophysical work Bring up sparker & side scan fish	ngton
1619 End line  1654 Begin Area 3 line 110 S → N points 134-97  1739 End line  1801 Begin line 108 Area 3, N → S points 97-134  1845 Seas 3-5 ft E → W Winds E → W  1851 End line  1900 End geophysical work Bring up sparker & side scan fish	
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1739 End line  1801 Begin line 108 Area 3, N → S points 97-134  1845 Seas 3-5 ft E → W Winds E → W  1851 End line  1900 End geophysical work Bring up sparker & side scan fish	
1801       Begin line 108 Area 3, N → S points 97-134         1845       Seas 3-5 ft E → W Winds E → W         1851       End line         1900       End geophysical work Bring up sparker & side scan fish	
1845 Seas 3-5 ft E → W Winds E → W  1851 End line  1900 End geophysical work Bring up sparker & side scan fish	
1851 End line  1900 End geophysical work Bring up sparker & side scan fish	
1900 End geophysical work Bring up sparker & side scan fish	
1915 Sparker & fish aboard Head for Chevron platform for navigation	
calibration	
1950 Calibrate at platform, Area 3	
1955 Maintain boat in area of platform	
2359 Maintaining boat in Area 3	
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		Project
Client	BIM Rep Mellissa Smith	Date 8-25-78
Work Area	Eastern Gulf of Mexico	Supervisor Bennington
Time		
0000	Maintaining boat in platform, Area 3	
0700	Weak navigation signal from shore station. Co	ontacting shore
	personnel	
0720	Pick up navigation signal Recalibrate and he	ead 70 Area
0730 .	Seas 1-3 ft, SE → NW Winds SE → NW	
0801	Arrive at line 205, shot points 32-34, Area 3	Camera in water
0816	Bottom in view, take navigation fix.	
0824	Drifting in area and photographing bottom. Dr	rift 0.75 knots, 210°
0830	Try maintaining headway in low RPM. Camera b	ouncing due to swells.
0846	Camera off bottom	
0907	Camera sled on deck Putting on depressor pla	ates
0933	Plates on	
0937	Head to line 205 between shot points 32-34, A	rea 3.
0955	Camera in water, lowering .	
1004	Navigation fix	
1020	Bottom in view	
1030	Begin drift transect, NE → SW @ 210 over line	205, points 32 to 34.
1048	Engage engines to maintain line	
1049	Drifting while photographing	
1123	Camera off bottom. Head to line 101 of Area	3 with camera in tow.
And a second second second	To point 67	
continue	A CONTRACTOR OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY O	
011011100	WCC	Client

		Project	41069A		
Client	BLM Rep Mellissa Smith	Date	8-25-78		
Work Area	Eastern Gulf of Mexico	Supervis	or Bennington		
Time					
1210	Sled and camera on deck. Towing too slow in	present seas.			
1224	Sled on deck				
1225	Naviation fix				
1324	Arrive site				
1332	Camera in water, lowering				
1334	Navigation fix Cable jumps saw				
1350	Repaired, but jumps again change saw				
1400	Drift is now more than 2 knots Decide to re	m into drift,	W → E		
1414	New saw installed Pre plot course				
1430	Underway to Area 3, line 103, points 66 to 1	ine 101 point	63		
1526	Arrive in Transect area	Arrive in Transect area			
1531	Camera in water				
1554	Bottom in view, maneuver to start				
1605	Seas 2-4, E → W, white caps Winds E → W				
1635	Strong currents preventing us from making hea	adway with one	engine at		
	550 rpm and camera in tow. Make only 1.5 km	ots Try 2 en	gines at		
	clutch speed current about 2 knots				
1640	Lose station signal momentarily. Take loran	fixes			
1643	Arrive Area 3. Run W → E along shot point I	line (50 m Nor	th of shot		
	point line 66) and across line 103. Bottom	in view.			
1711	Camera off bottom				
continue					
		_			

			Project 41069A	
Client	BIM	Rep Mellissa Smith	Date 8-25-78	
Work Area	Eastern Gulf of Me	xico	Supervisor Bennington	
Time				
1728	Sled aboard, h	ead Chevron platform for calib	pration	
1754	Seas 1-3 ft. E	SE → WSW Wind ESE → WSW		
1815	Navigation sig	mal on		
1820	Calibrate at C	hevron platform		
1825	Head to lines	108 & 106 of Area 3 Shot lin	nes 37-35.	
1920	Winds $E \rightarrow W$ , s	eas 1-2, E $\rightarrow$ W. Current SE $\rightarrow$	NW	
1950	Arrive and dep	loy sled buoy		
1954	Camera in wate	r		
1956	Take fix & low	er sled		
2003	Camera down			
2009	Begin maneuver	to start of W → E transect ½	way between and parallel	
	to shot lines	37 and 38 and run across line	108	
2051	Begin transect	Begin transect Encounter outcrops		
2107	End transect,	camera in tow .		
2116	Arrive and beg	in W → E transect of line betw	ween shot points 35 and 36	
	running across	line 106.		
2120	TV cable off t	o starbord side due to strong	currents from NE Difficulty	
	to maintain he	ading.		
2122	Try headings 8	5, 75, 55° to try to straight	ten camera cable No work	
2132	Continental Sh	elf Associate representative h	pelieves sled rudder	
parameter for any manager	malfunctioning			
continue				
		WCC	Client	

					Project	41069A
Client	BLM	Rep	Mellissa Sm	i.th	Date	8-25-78
Work Area	Eastern Gulf of Mexico				Superviso	or Bennington
Time						
2132	Camera off bottom	n				
2142	Sled on board					
2154	Head to Chevron p	olatfor	m ·			
2247	Calibrate navigat	ion at	platform			
2248	Maintain boat in	Area 3	3			
2359	Maintaining boat	in Are	ea 3			
						and of the Manhall Spirit of the Challes annual Laurence A. C.
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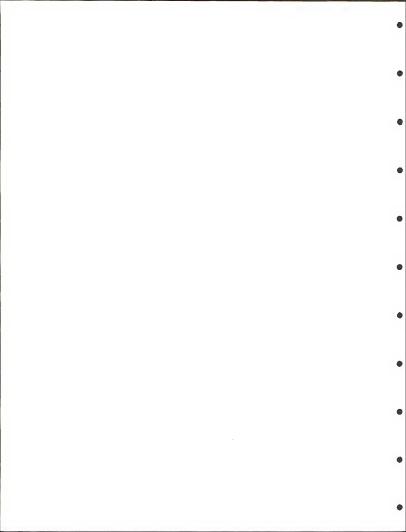
		Project 41069A
Client	BLM Rep Mellissa Smith	Date 8-26-78
Work Area	Eastern Gulf of Mexico	Supervisor Bennington
Time		
0000	Maintaining boat in Area 3	
0650	Calibrate navigation at Chevron platform	
0655	Head for Area 3, line 112, point 97	
0720	Seas 1-2 ft., ESE → WNW Winds ESE → WNW	
0735 .	At station, drifting to determine directi	on and speed OC drift
	Very slow to NW	,
0800	Seas picking up along with wind From SE	
0805	Camera in water	
0822	Camera down, begin maneuver	er antener og en et tradingrider en en en stad och blikke belän en en en en et en et en en en en en en en en e
0833	Arrive transect, start. Camera at 250'	Pinnacle tops at 320'
0845	Maneuvered to south	
0900	Cut engines Drift north very irregular	bottom Depth @ 365' w/
	pinnacles to 320'	
0908	Camera to 300'. Cautious. Watching fath	ometer to keep above peaks
0920	Camera to bottom between areas of relief.	
0927	See pinnacles below w/camera	
0940	Camera coming up, end transect	
0954	Sled on deck	
1005	Head to platform for calibration. Area v	ery hazardous. Fortunate
en hagelige delle a l'Estimité diference com passe à delle	to get good shots from above Have shot.	s of major outcrops from
management and all Millions are assumed that	lines 108, 106, 112	
continue		
	WCC	Client

		Project 41005A			
Client	BIM Rep Mellissa Smi	th Date 8-26-78			
Work Area	Eastern Gulf of Mexico	Supervisor Bennington			
Time					
1005	Calibration fix at Chevron platform,	Area 3 Head Area 2			
1245	Arrive Area 2				
1250	Deploy Lane Count Buoy				
1305	Seas 1-3 feet, choppy ESE → WNW Drif	t is to NW, 0.75 to 1 knot			
1322	Head to west end of shot line 67 at 1	Line 101 of Area 2			
1340	Begin W → E fathometer run looking fo	or outcrops			
1353	End fathometer run, head back to tran	nsect beginning			
1400	Camera in water; lowering				
1416	Camera at 200 ft., maneuver to start	mera at 200 ft., maneuver to start			
1437	Arrive, lower sled to bottom	arrive, lower sled to bottom			
1441	Begin transect $W \rightarrow E$ along shot point	Begin transect W $\rightarrow$ E along shot point line 67 across line 101 Area 2			
1507	Off bottom, end transect	Off bottom, end transect			
1518	Camera sled aboard Head north to sh	not point 52 of line 101, Area 2			
1550	Rain				
1600	Seas 1-2 ft E → W Wind SE → NW	•			
1607	Camera in water				
1622	Camera at 200 feet. Maneuver to tran	nsect start			
1645	Lower camera to 235 feet				
1648	Bottom in view. Begin $E \rightarrow W$ transect	of shot point line 52 across line			
	10I of Area 2				
1716	Tow boat dead ahead, camera off botto	Om.			
continue					
		Client			

		Project 41009.			
Client	BLM Rep Mellissa Smith	Date 8-26-73			
Work Area	Eastern Gulf of Mexico	Supervisor Bennington			
Time					
1725	Camera coming up				
1734	Camera on deck; retrieve buoy				
1738	Head to Area 2, line 102, shot point 10				
1810	Arrive shot point 10 of line 102	Arrive shot point 10 of line 102			
1812	Camera over side. Lower to 150' Maneuver to	transect start			
1831	Arrive & lower camera to bottom				
1832	Begin transect W → E along shot point line 10	across line 201			
1853	Camera off bottom at 150'				
1853	Tow south. Current during W + E transect pul	led sled sout of boat			
	so that fathometer did not correlate with sle	d position. Visibility			
	on bottom very bad 3-5 feet				
1923	Head north Lower camera				
1924	Bottom in view Begin transect 60 meters eas	t and parallel to			
	line 102 across shot points 12-8				
1930	Cut engines. Rate of speed too great with en	gines engaged Drift			
	over shot points 11, 10, 9				
1932	Not drifting due north more NE				
1946	Begin receiving bad navigation signals from c	ne station			
1949	Camera coming up				
1956	Sled on deck				
2003	Sled buoy on deck slow speed towards Pensac	cola while developing slides			
continue					
CONTELLIG	WCC	Client			

				ct 41069A 8-26-78
Client	BLM	Rep Mellissa Sm	ith Date	
Work Area	Eastern Gulf of Mex	:100	Super	visor Bennington
Time				
2003	to ensure nic	ture coverage of Area 2		
2115	Finished deve	elop Running speed to	Pensacola	
2359	Enroute Pens	sacola, Fla.		
CONTRACTOR SECTION AND ADDRESS OF STREET				
	_		And the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s	
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	-	The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon		And the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s
			NCC	Client

				Project _	41069A
Client	BIM	Rep Mellissa Sm	ith	Date	8-27-78
	Eastern Gulf of Mexico			Supervisor	Bennington
Time					
0000	Enroute Pensacola	Fla			
0145	Dock A Pensacola	, Fla.			
					·
	END OF CRUISE				
	***************************************				
)					
	Annahada Maria garan da arang at Annahada an arang at Annahada an arang at Annahada an arang at Annahada an ar				
	-				<del></del>
and upon the contract of the first contract					
			WCC	Cli	ent



4.2 Time Allotment



#### TABLE OF TIME ALLOTMENT (HOURS) CRUISE II GROUND TRUTH SURVEY

PORT	TRANSIT	SURVEY*	DOWN
TIME	TIME	TIME	TIME
24			
	11	12	18
	4	20	
	17	5	2N
12	12		
9	15		
12	12		
	1	23	
	9	13	2S
		24	
		24	
	7	17	
22	2		
	24 **		
	24 **		
	24 **		
	12 9 12	TIME TIME  24  11 4 17 12 9 15 12 12 9 7 22 24 ** 24 **	TIME TIME TIME  24  11 12 4 20 17 5 12 12 9 15 12 12 1 23 9 13 9 13 24 24 24 27 22 2 24 ***

DOWN TIME SOURCE

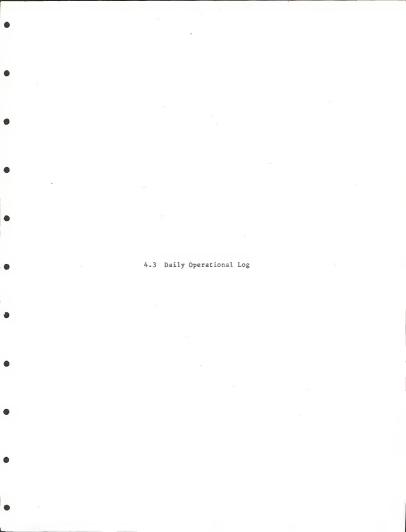
<sup>\*</sup> Includes calibration time and other steaming time within (but not between) work areas.

<sup>\*\*</sup> Ship only

S = SHIP

N = NAVIGATION SYSTEM







GECHARINE DAILY FIELD REPORT

		Project 41069A
		00 Date 8/15/78
Area EASTERN GULF OF MEXICO	) - ST. PETERS	SBURG Supervisor RESTA
Field Personnel		
NAME	HOURS	NAME HOL
1. RESTA (WCC)		PETERSON (CSA)
2. McELMAN (WCC)		6. AYER (CSA) 12
3. BENNINGTON (TerEco)		7
4. RUBRIGHT (TerEco)		8.
4. ROBRIGHT (TELECO)		
Time Start Work Day		Time Boat Leaves DockDOCKSIDE
Time End Work Day		Time Boat Ties Up
WCC Equipment		
1. UNIBOOM		3. ONAN GENERATOR
2. MES SYSTEM		RAYTHEON DE719
z. Itas sisiar		**
Rental Equipment		
1. KLEIN 530 SYSTEM		3. RENTHOS 35mm CAMERA
2. HYDROPRODUCTS TV		4. SEA MAC 500
Expendables/Spares Consumed		
1.		3,
2		4
Equipment Lost		Reason
1.		
2.		
Floating Equipment		
1 toacrily Equipment		
Subcontractors		
1. DECCA SURVEYORS		No. of Men 2
DECCA SURVEYORS     M/V SEA TRANSPORTER		No. of Men 7
DECCA SURVEYORS     M/V SEA TRANSPORTER		No. of Men 7
DECCA SURVEYORS     M/V SEA TRANSPORTER		No. of Men 2 No. of Men 7
DECCA SURVEYORS      M/V SEA TRANSPORTER  Rental Vehicles 1.  Personal Vehicles 1.		No. of Man 7
DECCA SURVEYORS      M/V SEA TRANSPORTER  Rental Vehicles 1.  Personal Vehicles 1.		No. of Man 7
DECCA SURVEYORS      M/V SEA TRANSPORTER  Rental Vehicles 1.  Personal Vehicles 1.		Ro. of Men 7  2.  2.  2.  Y, MOBILIZE GROUND TRUTH SURVEY
DECCA SURVEYORS     M/V SEA TRANSPORTER     Rental Vehicles    1.     Work Accomplished DEMOBILIZE GEO	PHYSICAL SURVE	Ro. of Men 7  2.  2.  2.  Y, MOBILIZE GROUND TRUTH SURVEY
DECCA SURVEYORS      M/V SEA TRANSPORTER  Rental Vehicles 1.  Personal Vehicles 1.	PHYSICAL SURVE	No. of Man 7 2. 2. 2. 2. Y. MOBILIZE GROUND TRUTH SURVEY
1. DECCA SURVEYORS 2. M/V SEA TRANSPORTER Rental Vehicles 1. Personal Vehicles 1. Hork Accomplished DEMOBILIZE GEO  CASH ITEM	PHYSICAL SURVE	No. of Man 7 2. 2. 2. 2. Y. MOBILIZE GROUND TRUTH SURVEY
DECCA SURVEYORS     M/V SEA TRANSPORTER     Rental Vehicles    1.     Work Accomplished DEMOBILIZE GEO	PHYSICAL SURVE	No. of Man 7 2. 2. 2. 2. Y. MOBILIZE GROUND TRUTH SURVEY
1. DECCA SURVEYORS 2. M/V SEA TRANSPORTER Rental Vehicles 1. Personal Vehicles 1. Hork Accomplished DEMOBILIZE GEO  CASH ITEM	PHYSICAL SURVE	No. of Man 7 2. 2. 2. 2. Y. MOBILIZE GROUND TRUTH SURVEY
1. DECCA SURVEYORS 2. M/V SEA TRANSPORTER Rental Vehicles 1. Personal Vehicles 1. Hork Accomplished DEMOBILIZE GEO  CASH ITEM	PHYSICAL SURVE	No. of Man 7 2. 2. 2. 2. Y. MOBILIZE GROUND TRUTH SURVEY
1. DECCA SURVEYORS 2. M/V SEA TRANSPORTER Rental Vehicles 1. Personal Vehicles 1. Work Accomplished DEMOBILIZE GEO  CASH ITEM 1. 2. 3. 4. 5. 6. 7. 8.	PHYSICAL SURVE SUPPLIES AND AMOUNT	RO. of Man 7  2.  2.  IX, MOBILIZE GROUND TRUTH SURVEY  DESTENSES  CREDIT/CHARGS ITEM CASD ON FIRM AMBUST  1.  2.  3.  4.  4.  5.  7.
1. DECCA SURVEYORS 2. M/V SEA TRANSPORTER Rental Vehicles 1. Personal Vehicles 1. Hork Accomplished DEMOBILIZE GEO  CASH ITEM	PHYSICAL SURVE SUPPLIES AND AMOUNT	RO. of Man 7  2.  2.  2.  VY MOBILIZE GROUND TRUTH SURVEY  DEXTERSES  CREDIT/CHARGS ITEM CASD OR FIRM AMOUNT  1.  2.  3.  4.  5.  6.  7.  8.

Initiale: WCC\_\_

## WOODWARD-CLYDE CONSULTANTS GECMARINE DAILY FIELD REPORT

			Project	410691	
Client BLM	Rep BARKALO		Date	8/16//8	
Area EASTERN GULF OF MEXICO	- AREA 9		Supervisor	RESTA	
Field Personnel		****			HOUDE
NAME TO A TOTAL A	HOURS	name 5. PETERSON	(004)		HOURS
RESTA (WCC)					
2. McELMAN (WCC)		6. AYER (CS			
3. BENNINGTON (TerEco)		7			
4. RUBRIGHT (TerEco)		8			
0000		Time Boat Leaves Do	ork 0012		
Time Start Work Day 0000 Time End Work Day 2400		Time Boat Ties Up _			
WCC Equipment					
1. UNIBOOM		3. ONAN GEN	ERATOR		
2. MES SYSTEM		4. RAYTHEON	DE/19		
Rental Equipment		3. RENTHOS	35mm CA	MERA	
1. KLEIN 530 SYSTEM					
2. HYDROPRODUCTS TV		4. SEA MAC	500		
Expendables/Spares Consumed					
		3			
1.		4.			
2.		**			
Equipment Lost		Reason			
1					
2.					
Floating Equipment					
110001113 11011111111111111111111111111					
Subcontractors					
1. DECCA SURVEYORS				No. of h	len
2. M/V SEA TRANSPORTER				_ No. of h	len
Rental Vehicles 1.		2			
Personal Vehicles 1.		2			
Work Accomplished AREA 9 LINE 201	, TV AND CAME	RA SURVEY			
	SUPPLIES AND	EXPENSES			
	AMOUNT	CREDIT/CHARGE I	TEM CARD	OR FIEM	AMOUNT
CASH ITEM	AMOUNT	T.	1210		
2.		3.			
<del>4.</del>		14.			
5.		5.			
7.		7.			
8.		١٤٠			
Total Cash Expenses		Total Credi	t Expenses _		
Weather	_				
Torments					

Initials: VCC

GEOMARINE DAILY FIELD REPORT

Client BLM	Rep BAR				8/17/78	
Area EASTERN GULF OF MEXIC	O - AREAS	7, 6		Super	rvisor RESTA	-
Field Personnel						
	HOURS		NAME			HOUS
NAME 1. RESTA (WCC)	1100113		_	PETERSON (C:	SA)	***************************************
14 manual (1200)						
			-	AYER ( CSA)		
3. BENNINGTON (TerEco)			7			
4. RUBRIGHT (TerEco)			٤			
Time Start Work Day			Tire	Boat Leaves Dock	AT SEA	
Time End Work Day				Boat Ties Up		
WCC Equipment						
1. UNIBOOM			3	ONAN GENERA		
			4	RAYTHEON DE	719	
Rental Equipment				RENTHOS 35mg	CAMEDA	
1. KLEIN 530 SYSTEM			-			
2. HYDROPRODUCTS TV			4	SEA MAC 500		
Expendables/Spares Consumed						
1			3.			
2.						
٤.			-			
Equipment Lost			Reaso	<u>on</u>		
1			-			
2.						
Floating Equipment						
Subcontractors					ie	v 2
1. DECCA SURVEYORS					NO. OT	ren
2. M/V SEA TRANSPORTER					No. of	Men /
Rental Vehicles 1.			_ 2.			
Personal Vehicles 1.			2.			
Work Accomplished AREA 7 LINE 2	05, AREA 6A	LINE	101,	TV AND CAMERA	SURVEY	
	SUPPLI	TES AND E.	KPENSES			
CASH ITEM	AMOUNT		C	REDIT/CHARGE ITEM	CARD OR FIRM	AMDUNT
1.			2.			
3.			3.		-	+
17.			5.			
5.			6.		-	
5. 6.			7.			

Initials: WCC

#### WOODMARD-CLYDE CONSULTANTS GECMARINE DAILY FIELD REPORT

Client BLM	BARKALOO		Project 41069A Date 8/18/78	
Area EASTERN GULF OF MEXICO	- AREA 9		Supervisor RESTA	
Area				
Field Personnel				
NAME	HOURS	NAME		HOURS
1. RESTA (WCC)		5. PETERSO	N (CSA)	
2. McELMAN (WCC)		6. AYER (C	SA)	
3. BENNINGTON (TerEco)		7		
4. RUBRIGHT (TerEco)				
			Dock AT SEA 2205 PORT MANATEE	
Time Start Work Day		Time Boat Leaves	2205 PORT MANATEE	
Time End Work Day		Time boar tree op		
ECC Equipment				
1. UNIBOOM			NERATOR	
2. MES SYSTEM		4. RAYTHEO	N DE/19	
Rental Equipment		RENTHOS	35mm CAMERA	
1. KLEIN 530 SYSTEM				
2. HYDROPRODUCTS TV		4. SEA MAC	300	
Expendables/Spares Consumed				
1.		3.		
2.				
Equipment Lost		Reason		
1				
2				
Floating Equipment				
Subcontractors			v 2	
1. DECCA SURVEYORS			No. or nen 2	
2. M/V SEA TRANSPORTER			No. of Men/	
Rental Vehicles 1.		_ 2		
rersonar renteres it				
Work Accomplished AREA 9 LINE 20	1 TV AND CAMES	RA SURVEY		
	SUPPLIES AND E	EXPENSES		
		CREDIT/CHARGE	ITEM CARD OR FIRM AMOUNT	
CASH ITEM	AMOUNT			
CASH ITEM	AMOUNT	1.		
1. 2. 3.	AMOUNT	1. 2. 3.		
1.	AMOUNT	1. 2. 3. 4. 5.		
1. 2. 3.	AMOUNT	1. 2. 3. 4.		

Initials: WCC\_

#### WOODWARD-CLYDE, CONSULTANTS GECMARINE DAILY FIELD REPORT

		Project <u>41069</u> .	
Client BLM	Rep BARKALO		
Area EASTERN GULF OF MEXI	CO - AT SEA	Supervisor RESTA	
51.31.5			
Field Personnel	HOURS	NAME	HOURS
1. RESTA (WCC)	10000	5. PETERSON (CSA)	PAGE 11.200.0
2. McELMAN (WCC)		6.	
3. BENNINGTON (TerEco)		7	
3. BERNINGTON (TELECO) 4. RUBRIGHT (TerEco)		8.	
4. ROBRIGHT (TELECO)			
Time Start Work Day		Time Boat Leaves Dock 1145 PORT N	
Time End Work Day		Time Boat Ties Up AT SEA	
NCC Equipment			
1. UNIBOOM		3. ONAN GENERATOR	
2. MES SYSTEM		4. RAYTHEON DE719	
	-		
Rental Equipment		PENTUON SE CAMERA	
1. KLEIN 530 SYSTEM		3. RENTHOS 35mm CAMERA	
2. HYDROPRODUCTS TV		4. SEA MAC 500	
5 INN If Comment			
Expendables/Spares Consumed 1.		3.	
2.		4.	
2.			
Equipment Lost		Reason	
1			
2			
Floating Equipment			
Subcontractors			•
Subcontractors		No. of	Hen 2
1 DECCA SURVEYORS		No. of	Hen 2
DECCA SURVEYORS     M/V SEA TRANSPORTER		No. of	Men 2 Men 7
DECCA SURVEYORS     M/V SEA TRANSPORTER  Rental Vehicles 1.		No. of	Ken 2
DECCA SURVEYORS     M/V SEA TRANSPORTER Rental Vehicles    1. Personal Vehicles    1.		2 No. of	: Ken7
DECCA SURVEYORS     M/V SEA TRANSPORTER Rental Vehicles    1. Personal Vehicles    1.		No. of	: Ken7
DECCA SURVEYORS     M/V SEA TRANSPORTER Rental Vehicles    1. Personal Vehicles    1.	AT FUEL, WATER,	2 No. of 2 2 ENROUTE TO PANAMA CITY	: Ken7
DECCA SURVEYORS     M/V SEA TRANSPORTER     Rental vehicles 1.     Personal Vehicles 1.     Work Accomplished REPLENISH BO/	AT FUEL, WATER,	Z	7 Ken 7
DECCA SURVEYORS     M/V SEA TRANSPORTER Rental Vehicles    1. Personal Vehicles    1.	AT FUEL, WATER,	2 No. of 2 2 ENROUTE TO PANAMA CITY	: Ken7
DECCA SURVEYORS     M/V SEA TRANSPORTER     Rental vehicles 1.     Personal Vehicles 1.     Work Accomplished REPLENISH BO/	AT FUEL, WATER,	Z	7 Ken 7
DECCA SURVEYORS     M/V SEA TRANSPORTER     Rental vehicles 1.     Personal Vehicles 1.     Work Accomplished REPLENISH BO/	AT FUEL, WATER,	Z	7 Ken 7
DECCA SURVEYORS     M/V SEA TRANSPORTER     Rental vehicles 1.     Personal Vehicles 1.     Work Accomplished REPLENISH BO/	AT FUEL, WATER,	Z	7 Ken 7
DECCA SURVEYORS     M/V SEA TRANSPORTER     Rental vehicles 1.     Personal Vehicles 1.     Work Accomplished REPLENISH BO/	AT FUEL, WATER,	ROO. of  2.  2.  FOOD. ENROUTE TO PANAMA CITY  DEFENSES  CREDIT/CHARGE ITEM CARD OR FIRM  1.  2.  3.  5.  5.	7 Ken 7
DECCA SURVEYORS     M/V SEA TRANSPORTER     Rental vehicles 1.     Personal Vehicles 1.     Work Accomplished REPLENISH BO/	AT FUEL, WATER.  SUPPLIES AND  ANCOUNT	No. of  2.  2.  POOD. ENROUTE TO PANAMA CITY  DEFENSES  CREDIT/CHARGE ITEM CARD OR FIRM  1.  3.  4.  5.  5.  6.  7.	ANOUNT

Initiale: WCC

## WOODWARD-CLYDE CONSULTANTS GEGMARINE DAILY FIELD REPORT

				Project	41069A	
Client BLM	Rep BAR	KALOO-SM	IITH		8/20/78	5
Area EASTERN GULF OF MEXICO	- PANAMA	CLTY		Superviso	RESTA	
Field Personnel						
NAME	HOURS		NAME	N (001)		MOURS
1. RESTA (WCC)			s. PETERSO			
2. McELMAN (WCC)			6			
3. BENNINGTON (TerEco)			7			
4. RUBRIGHT (TerEco)			8			
Time Start Work Day			Time Boat Leaves Time Boat Ties Up	Dock AT	SEA O PANAMA	CITY
WCC Equipment						
1. UNIBOOM			3. ONAN GE	NERATOR		
2. MES SYSTEM			A. RAYTHEC	ON DE719		
Rental Equipment			3. RENTHOS	35mm C	AMERA	
****			4. SEA MAC			
2. HYDROPRODUCTS TV			4. SER PIAC	, 300		
Expendables/Spares Consumed						
1.			3			
2.			4.			
			Reason			
Equipment Lost			Keason			
1.						
2						
Floating Equipment						
Subcontractors						
1. DECCA SURVEYORS					No. of 1	en2
2 M/V SEA TRANSPORTER					No. of h	ien
Rental Vehicles 1.			2			
A			2.			
Work Accomplished TRANSIT TO PAN.	AMA CITY,	CHANGE	BLM REPS, I	OAD NEW	WINCH &	COMPRESSOR
	SUPPLI	TES AND EXPR	INSES			
CASH ITEM	AMOUNT		CREDIT/CHARGE	ITEM CAS	O OR FIEM	AMOUNT
1.		F	2.			
3.			3.			
4.			5.			
6.			6.			
8.			8.			
			Fotal Cres	dit Expenses		
Total Cash Expenses	-		10th Cres	ver puberess		

Initiale: WCC

Client

Weather

# MODDHARD-CLYDE CONSULTANTS GEOMARINE DAILY FIELD REPORT

Hent ELM	SMITH		Project 41069A Date 8/21/78	
EASTERN GULF OF MEXIC	CO - AT SEA		Supervisor RESTA	
rea			3370,7770	
ield Personnel				
EAME.	HOURS	NAME.		HOURS
RESTA (WCC)		5. PETERSO	ON (CSA)	
. McELMAN (WCC)				
BENNINGTON (TerEco)		7		
RUBRIGHT (TerEco)				
Time Start Work Day		Time Boat Leaves	Dock 1225	
Time End Work Day		Time Boat Ties Up	Dock 1225 AT SEA	
GC Equipment				
. UNIBOOM		3. ONAN GI	ENERATOR	
MES SYSTEM		4. RAYTHEO	ON DE719	
Rental Equipment				
. KLEIN 530 SYSTEM		3. RENTHOS	35mm CAMERA	
. HYDROPRODUCTS TV		4. SEA MAC	500	
Expendables/Spares Consumed				
		3.		
		4		
Quipment Lost		Reason		
loating Equipment				
Subcontractors				
. DECCA SURVEYORS			No. of Fi	en2
. M/V SEA TRANSPORTER			No. of Ma	en7
Rental Vehicles 1.		2		
Personal Vehicles 1.				
Nork Accomplished TRANSIT TO AR				
	SUPPLIES AN			
CASH ITEM	AMOUNT	CREDIT/CHARGE	ITEM CARD OR FIRM	THUCHA
2.		2.		
5. 4.		4.		
5.		6.		
7. 8.		7.		
Total Cash Expenses	and the same of the same of		dit Expenses	
		20.000		
leather				
Torments				

## WOODWARD-CLYDE CONSULTANTS GEOMARINE DAILY FIELD REPORT

77.14	CMITTON		- 0/009	
Client BLM Rep.	SMITH DEA /			
Area EASTERN GULF OF MEXICO - AN	KEA 4		Supervisor RESTA	
Field Personnel				
NAME	HOURS	NAME		HOURS
1. RESTA (WCC)			N (CSA)	
2. McELMAN (WCC)				
3. BENNINGTON (TerEco)				
4. RUBRIGHT (TerEco)				
4. ROBRIGHT (TELECO)	-			-
Time Start Work Day		Time Boat Leaves [	Dock AT SEA	
Time End Work Day		Time Boat Ties Up		
NOC Faudament				
NCC Equipment  1. UNIBOOM		3. ONAN GE	NERATOR	
1. UNIBOOM 2. MES SYSTEM		4. RAYTHEO	N DE719	
2. FIES SISIEM		4.		
Rental Equipment				
1. KLEIN 530 SYSTEM		3. RENTHOS	35mm CAMERA	
2. HYDROPRODUCTS TV		4. SEA MAC	500	
Expendables/Spares Consumed				
1		3		
2		4		
Equipment Lost		Reason		
1.				
2.				
Floating Equipment				
Subcontractors				
1. DECCA SURVEYORS			No. of	Men2
2. M/V SEA TRANSPORTER			No. of	Men
Rental Vehicles 1.		2		
Personal Vehicles 1.		2		
Work Accomplished TV AND CAMERA SI	RVEY AREA 4	TRANSIT TO	AREA 3	
	SUPPLIES AND E	XPENSES		
	MOUNT	CREDIT/CHARGE	ITEM CARD OR FIRM	AMOUNT
[.	SOOM.	1.		
Σ.		2.		
3.		4.		
5. 6.		5.		+
7.		7.		
8.		8.		
Total Cash Expenses		Total Cred	it Expenses	

Initials: WCC

#### GEOMARINE DAILY FIELD REPORT

Client BLM Rep SM	Project 41069A  ITH Date 8/23/78
Area EASTERN GULF OF MEXICO - AREA	3 Supervisor RESTA
Area	
Field Personnel	
NAME HOURS	
1. RESTA (WCC)	5. PETERSON (CSA)
2. McELMAN (WCC)	6
3. BENNINGTON (TerEco)	7.
4. RUBRIGHT (TerEco)	8
Time Start Work Day	Time Boat Leaves Dock AT SEA
Time End Work Day	
WSC Equipment	
1. UNIBOOM	3. ONAN GENERATOR
2. MES SYSTEM	4. RAYTHEON DE719
Rental Equipment	
1KLEIN 530 SYSTEM	3. RENTHOS 35mm CAMERA
2. HYDROPRODUCTS TV	4. SEA MAC 500
Expendables/Spares Consumed	
1.	
2	4.
Equipment_Lost	Reason
1.	
2.	
Floating Equipment	
riostrig Equipment	
Subcontractors	
1. DECCA SURVEYORS	No. of Men 2
2. M/V SEA TRANSPORTER	No. of Men
Rental Vehicles 1.	2.
Personal Vehicles 1.	2.
Work Accomplished GEOPHYSICAL SURVEYING (	OF LINES NOT RUN IN FIRST CRUISE IN AREA 3
cano	JES AND EXPENSES
CASH ITEM AMOUNT	CREDIT/CHARGE ITEM CARD OR FIRM ASSUNT
1.	1.
3.	3.
4.	4. 5.
5.	6.
5. 6.	, , , , , , , , , , , , , , , , , , ,
7. 5. 6. 7. 8.	γ̈΄. ε.

Initials: WCC

#### WOODWARD-CLYDE CONSULTANTS GECMARINE DAILY FIELD REPORT

			Project 4	1069A
Client BLM	Rep SMITH		0	
Area EASTERN GULF OF MEXICO	_ AREA 3		SupervisorP	ESTA
Field Personnel				110010-
NAME PROPERTY (TIME)	HOURS	NAME	1 (001)	HOURS
1. RESTA (WCC)		5. PETERSON		
2. McELMAN (WCC)		6		
3. BENNINGTON (TerEco)		7		
4. RUBRIGHT (TerEco)		8		
Time Start Work Day		Time Boat Leaves D	ock AT SEA	
Time End Work Day		Time Boat Ties Up		
WSC Equipment		3. ONAN GEN	JED ATOD	
1. UNIBOOM		4. RAYTHEON	V DE719	
2. MES SYSTEM		4.		
Rental Equipment				
1. KLEIN 530 SYSTEM		3. RENTHOS	35mm CAME	RA
2. HYDROPRODUCTS TV		4. SEA MAC	500	
Expendables/Spares Consumed				
1.				
2	-	4.		
Equipment Lost		Reason		
1.				
2.				
Floating Equipment				
Subcontractors				
1. DECCA SURVEYORS				No. of Men Z
2. M/V SEA TRANSPORTER				No. of Men/
Rental Vehicles 1.		2		
Personal Vehicles 1.	<u> </u>	2.		
Work Accomplished GEOPHYSICAL SURV				
-				
	SUPPLIES AN	D EXPENSES		
CASH ITEM	AMOUNT	CREDIT/CHANGE I	TEM CARD OR	FIRM AMOUNT
1.		2.		
3.		3.		
5. 6.		5.		
7.		7.		
8.		8,		
Total Cash Expenses		Total Credi	t Expenses	

Initials: WCC\_

# WOODWARD-CLYDE CONSULTANTS GECMARINE DAILY FIELD FEPORT

MOURS		NAME 5 6 7 8 Tire i	PETERSON  Joat Leaves Dioat Ties Up  ONAN GEN RAYTHEON	Supervi:  N (CSA)	F SEA	TA		
HOURS		NAME 5 6 7 8 Tire i	PETERSON  Loat Leaves Di  Loat Ties Up  ONAN GEN	V (CSA)	) F SEA			
		5	oat Leaves D	ockA	F SEA			
		5	oat Leaves D	ockA	F SEA			
		6 7 8 Tire i	oat Leaves D	ockA	F SEA			
		7	oat Leaves Doat Ties Up	ock A	F SEA		-	
		8 Tire i	oat Leaves Door Ties Up	ock A'	T SEA		-	
		Time i	oat Leaves Decat Ties Up	ock A'	r sea			
		Tire	ONAN GEN	VERATO	3			
		3	ONAN GEN	IERATOI	3			
			ONAN GEN	NERATO	2			
			ONAN GEN	NERATO	2			-
			RAYTHEON	DE719	9			
		4						
		4	SEA MAC	500				
		3						
		Reaso	1					
-								
					No	of Me	en	2
					No	of Ma	en	7
		2.						
		2.						
CAMERA S	SURVEY	ARE	A 3					
SUPPLIES	AND EXE	PENSES						
AMOUNT		C.F.	EDIT/CHARGE I	TEM (	CARD OR FI	RM	AMO	/NT
		1.						
		3.						
		5.						
		7.					_	
		8.						
			Total Credi	t Expense				_
	CAMERA S SUPPLIES AMOUNT	CAMERA SURVEY SUPPLIES AND EX.	2. 2. CAMERA SURVEY ARE SUPPLIES AND EXPENSES AMOUNT  5. 5. 6. 7. 8.	4. SEA MAC  3. 4.  ERRECT  2.  CAMERA SURVEY AREA 3  SUPPLIES AND EXPENSES  AMOUNT  1. 2. 3. 4. 5. 6. 7. 8. Total Credi	4. SEA MAC 500  3. 4.  E00507  2.  CAMERA SURVEY AREA 3  SUPPLIES AND EXPENSES  AMOUNT  1. 2. 3. 4. 5. 6. 7. 8. 7. 8. Total Gradit Expans.	4. SEA MAC 500  3. 4. Eessen  No  2. 2. CAMERA SURVEY AREA 3  SUPPLIES AND EXPENSES  AMOUNT  1. 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	4. SEA MAC 500  3. 4. Resson  No. of M  No. of M  2. 2. CAMERA SURVEY AREA 3  SUPPLIES AND EXPENSES  AMOUNT  1. 2. 3. 4. 5. 5. 6. 7. 8. Total Credit Expenses	4. SEA MAC 500  3. 4.  Resson  No. of Men  No. of Men  Ro. of Men  2.  CAMERA SURVEY AREA 3  SUPPLIES AND EXPENSES  AMOUNT  CEPTIT/GUARGE STEM CASO OR FIRM AMOUNT  1. 3. 4. 5. 5. 6. 7. 8.  Fotal Credit Expenses

Initiale: WCC

### WOODWARD-CLYDE CONSULTANTS GECMARINE DAILY FIELD REPORT

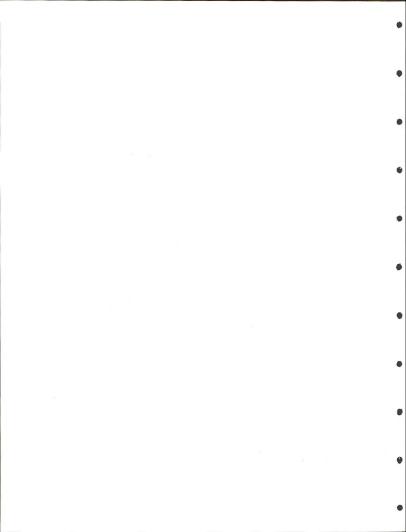
	C) (TMV)		Project 41069A	
Client BLM	Rep SMITH		Date 8/26/78	
Area EASTERN GULF OF MEXICO	- AREAS 3 & 2		Supervisor RESTA	<u></u>
Field Personnel				
	HOURS	NAME		HOUPS
Broth (120.0)			(CSA)	
1. RESTA (WCC) 2. McELMAN (WCC)				
3. BENNINGTON (TerEco)				
4. RUBRIGHT (TerEco)		8		
Time Start Work Day		Time Boat Leaves Do	ck AT SEA	
Time End Work Day				-
WCC Equipment		3. ONAN GENI	FRATOR	
1. UNIBOOM		RAVTHEON	DE719	
2. MES SYSTEM		4		
Rental Equipment				
1. KLEIN 530 SYSTEM		3. RENTHOS	35mm CAMERA	
		4. SEA MAC		-
2. HYDROPRODUCTS TV		4.		
Expendables/Spares Consumed				
1.		3.		
2.		4		
Equipment Lost		Reason		
1.				
2				
Floating Equipment				
Subcontractors			No. of Yen	2
1. DECCA SURVEYORS			No. of Man	7
2. M/V SEA TRANSPORTER			no. or ren	
Rental Vehicles 1.		2		
Personal Venicles 1.				
Work AccomplishedTELEVISION AN	D CAMERA SURVEY	ING IN AREAS 3	AND 2	
	SUPPLIES AND EX	TPENSE <b>S</b>		
CASH ITEM	AMOUNT	CREDIT/CHARGE IT	TEM CARD OR FIRM AME	דאענ
1.		1.		
2. 3. 4. 5. 6.		3.		
4.		5.		
5.		6.		
ř.		7.		
8.		8.		
Total Cash Expenses		Total Credit	Expenses	

Initiale: WCC

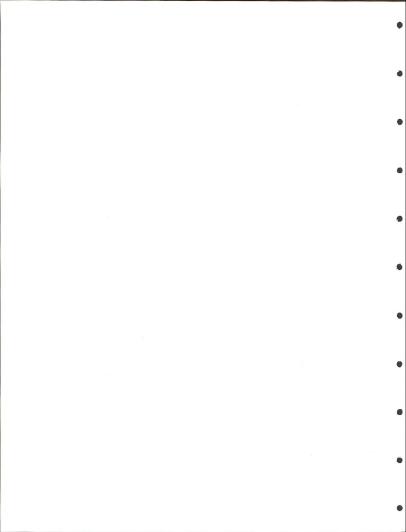
# WOODWARD-CLYDE CONSULTANTS GEOMARINE DAILY FIELD REPORT

lient BLM Rep	SMITH			Project	41069A 8/27/7	8
EASTERN GULF OF MEXICO - PENS	SACOLA				or RESTA	
-64						
ield Personnel						
	OURS	NAME				HOURS
RESTA (WCC)		_	PETERSON			
McELMAN (WCC)						
BENNINGTON (TerEco)						
RUBRIGHT (TerEco)		8				
ime Start Work Day		Time	Boat Leaves Do	ck AT	SEA	
ime End Work Day		Tipe	Boat Ties Up _	01	45	
CC Equipment			ONAN GEN	ED ATPOD		
. UNIBOOM			RAYTHEON	DE719		
. MES SYSTEM		4				
ental Equipment						
. KLEIN 530 SYSTEM		3	RENTHOS	35mm	CAMERA	
. HYDROPRODUCTS TV		4	SEA MAC	500		
xpendables/Spares Consumed						
•						
		4. –				
quipment Lost		Reaso	оп			
loating Equipment						
ubcontractors					i	u 2
. DECCA SURVEYORS					No. of	Ken _ 2
M/V SEA TRANSPORTER						Men 7
ental Vehicles 1.						
		_ 2.				
ork Accomplished ENROUTE TO PENSACOL	A, DEMOBI	LLIZE	SHIP			
s	SUPPLIES AND E.	XPENSES				
CASH ITEM AMOU	INT	C.	REDIT/CHARGE I	TEM C	ARD OR FIRM	AMOUNT
		2.				
3.		3.		-		
5.		5.				
		6.				-
5.		7				
5.		8.				

Initiale: WCC







#### KEY TO VISUAL REFERENCES

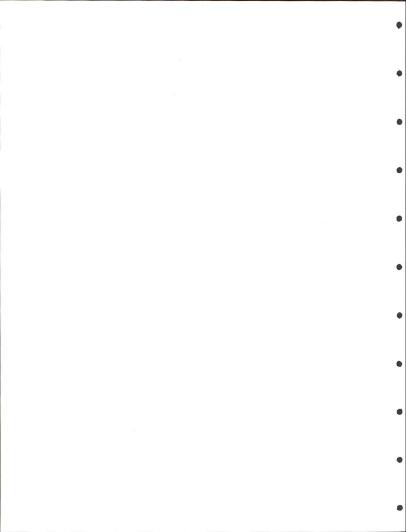
			Video	Reference			Color		
Are	a Tr	ansect	Tape no.	Counter range	Date	Time	Transparency	(pages)	Slide nos.
9 9 9			1 2 3 4	0-1050 0-1050 0-1050 0-795	8/16/78 8/16/78 8/16/78 8/16/78	1335-1418 1548-1924 1927-2031 2031-2100	1 2-3 3 4-6		Camera Calibration Only
7 7 7		A-A' A-A' A-A'	5 6 7	364-1045 0-1053 0-170	8/17/78 8/17/78 8/17/78	0950-1117 1118-1223 1224-1241	7-9 9-13 13		( 7-1 )-( 7-11) ( 7-12)-( 7-33) ( 7-34)
6 6 6		A-A' A-A' B-B' B-B'	7 8 9 10	420-1065 0-1050 0-1061 0-360	8/17/78 8/17/78 8/17/78 8/17/78	1515-1601 1605-1714 1714-1819 1819-1835	14-15 - 15-20 20		(6A-1 )-(6A-14) None (6A-15)-(6A-27) None
6 6		C-C' C-C'	10 11 12	360-1026 0-1063 0-819	8/17/78 8/17/78 8/17/78	2004-2054 2054-2159 2200-2302	21 21-23 23-26		None (6B-1 )-(6B-12) (6B-13)-(6B-18)
9 9 9		A-A' B-B' B-B'	13 14 15	0-1055 0-1065 0-365	8/18/78 8/18/78 8/18/78	1012-1118 1121-1225 1226-1240	27-28 28-33 33		( 9-1 )-( 9-14) ( 9-15)-( 9-38) None
4 4 4 4 4 4 4		A-A' A-A' B-B' C-C' C-C' D-D' D-D'	15 16* 17 17 18 19 20 21	365-1075 0-1068 0-785 785-1065 0-1065 0-1067 0-1080 0-561	8/22/78 8/22/78 8/22/78 8/22/78 8/22/78 8/22/78 8/22/78 8/22/78	1231-1321 1322-1427 1428-1509 1651-1715 1718-1822 1823-2057 2100-2202 2203-2214	34 34-36 36-37 - 38-39 39-42 42-45 45		None ( 4-1 )-( 4-9 ) ( 4-10)-( 4-16) None ( 4-17)-( 4-20) ( 4-21)-( 4-28) ( 4-29)-( 4-37) None



KEY TO VISUAL REFERENCES (Continued)

		Video	Reference			Color		
Area	Transect	Tape no.	Counter range	Date	Time	Transparency	(pages)	Slide nos.
3	A-A'	21	EC1 1007	0 /05 /70	0007 0040			
			561-1087	8/25/78	0901-0940	46		(3-1)
3	A-A'	22	0-122	8/25/78	0942-0946	46		None
3	B-B'	22	564-1092	8/25/78	1055-1135	46-47		(3-2)-(3-6)
3	B-B'	23	092-1192	8/25/78	1137-1244	47-50		(3-7)-(3-11)
3	C-C'	24	0-1060	8/25/78	1302-1514	_		None
3	C-C'	25	0-1089	8/25/78	1631-1736	50		None
3	C-C'	26	0-887	8/25/78	1740-1828	51-52		(3-12)-(3-15)
3	D-D'	26	887-1088	8/25/78	2054-2110	_		None
3	D-D'	27	0-1092	8/25/78	2112-2215	53-54		(3-16)-(3-30)
3	E-E	28	0-575	8/25/78	2216-2254	55		(3-31)-(3-33)
3	F-F'	28	575-1095	8/26/78	0905-0943	_		None
3	F-F	29	0-1098	8/26/78	0945-1054	56-57		( 3-34)-( 3-52)
2	N-N*	30	0-1066	8/26/78	1500-1610	58-61		(2-1)-(2-8)
2	B-B'	31*	0-1070	8/26/78	1614-1807	62-64		(2-9)-(2-11)
2	В-В'	32	0-208	8/26/78	1809-1816	65-67		(2-12)-(2-14)
2	C-C'	32	560-1070	8/26/78	1912-1951	68-70		(2-15)-(2-20)
2	c-c'	33	0-145	8/26/78	1953-1958	71-72		(2-21)-(2-22)
2	D-D'	33	613-1040	8/26/78	2023-2103	72-75		(2-23)-(2-32)
_	2 0	55	010 1040	0,20,10	2023-2103	12-13		( 2 23)-( 2-32)

<sup>\*</sup>Blank tape. Record button improperly engaged.



					Project	41069
Client BLM	Rep_	Barkaloo			Date 8/	L8/78
Work Area Eastern	Gulf of Mexi	co			Supervis	or Bennington
Transect Location	Area 9 W → E	Transect	≃ 250' N	of line	201 between	en SP 21-15

	TRANSPA	RENCIES	SLIDE	VIDEO TAPE	
TIME	PAGE	ROW	#	REEL COUNTER	NOTES
1012				13 0	Camera off side
1015					Camera in water
1018					Depth ~ 180'
1026				320	Bottom in view; drifting
1030				406	Begin maneuver to tran-
					sect line
1056				806	Begin 1 engine
1057				818	Bottom coming in view
1058	27	1	9-1	828	Bottom coarse
1011		1	9-2	866	hole See lots of
					polychaets; holes close
					as we pass
1102		2 .	9-3	887	Fish swim w/camera
1104		3		900	Whole area of black
					polychaet holes
1104			9-4	910	Crabs & holes
1106			9-5	935	SP 10 = SP 22
1108				961	SP 9 .
1110		4		972	SP 8
1110			9-6	982	Mound crabs
1111		5		989	Little craters
1111				996	Crabs
1113		6		010	SP 6 = SP 18
1114				021	Algae
1114		7	9-7	023	Starfish
1114			9-8	025	Outcrop
1115	28	1	9-9	034	
1115			9-10	035	Ripple marking
			9-11		
1116		3	9-12	042	Sled
1116			9-13	046	
			9-14		

					Project 41009
Client _	BLM		Rep Barka	100	Date 8/18/78
Work Area	a Eastern	n Gulf	of Mexico		Supervisor Bennington
Transect heading	Location for line	Area 100'	9 Moving off south of line	line W $\rightarrow$ E 250 201 (SP 7-0).	' north of line 201 and $(W \rightarrow E)$
	TRANSPARI	ENCIES	SLIDE	VIDEO TAPE	
TIME	PAGE	ROW	#	REEL COUNTER	NOTES
				1055	
1117	28	_3		13	
1118				end reel 13	Begin turn south
1121	·	4		14	Begin new reel
1124		5		116	B May be specific
					target
1126				150	Bottom appears varied
					w/light sant and maybe
					algal mat
		6			Much fewer polychaet
1128		7		194	holes. No crabs
1128				212	Tufts or patches of
1120				212	algae
1129	29	1	9-15	225	Fish, bottom rubble in
			9-16		areas
1129			9-17	236	SP 7
1131		3	9-17	270	Group of black holes
1131				275	SP 6
1132		4	9-18	290	Ripples
			9-19		
1132			9-20	298	Ripples
			9-21		
1134	30	2	9-22	324	New type
			thru 9-32		Rubble, whips, large sponges
1134		3	9-32	339	Fish
1134				350	Burrow
1135		4	9-33	357	Sponge & fish are less
1133		-4	9-33	351	diverse again
				373	Less sand patches, still
					sandy
1136				380	SP 3

						Project 41069
Client _	BLM		Rep Barka	100_		Date <u>8/18/78</u>
Work Are	a Easte	rn Gulf o	f Mexico			SupervisorBennington
Transect	Location	n Area 9	End transe	ect W >	E 100' so	uth of line 201 come about
and hea	ad E - W	over same	general an	ea. Di	ld meander	from 100' south of line
201 and						
	TRANSPA	RENCIES	SLIDE		EO TAPE	
TIME	PAGE	ROW	#		COUNTER	NOTES
1138	30	4		14	416	Algae matlike area again
						little diversity
1143					500	. Turn to come about &
						make 1 more run E to W
						along same line (inter-
						est in SP 3-6
1203					800	Cut engines,
						down. @ SP -3 ie 3 SP
						beginning of transect
1205					820	Sled on bottom momentaril
1207	30	6			845	Textured area w/some dark
						mat
1209					876	Depression off to right
1210		7			983	Check object
1210					888	Burrow
1210					892	Burrow
1211	31	1			900	Rivelets?
1211					≃700	SP 2
1213		2			921	Bottom trough
1213					925	SP 3
1214		3	9-34		932	Textured bottom
1214					932	Fish & burrow
1215		4			945	Debris & rubble & fish
1215		5	9-35		952	Angel fish & outcrops
			9-36			
		-			961	Another area algae &
						rubble
1216		7			965	Outcrop w/fish
1216	32	1	9-37			-
1217		3			970	SP 5
					974	Area of black tufts
1218	32	.5		14	980	Ripples & tufts
					9.87	Ripples coarse
						material SP.6
					990	Ripples & sponge
1219		7			1000	Dansel fish
					017	Area again flat w/algae
						cover Algal cover or mat
						not on ripples

						Project	41069
Client	BLM		Rep Barkal	.00		Date 8	
Work Are	a Easte	rn Gulf c	of Mexico			Supervisor	r Bennington
Transect 201 con		Area 9	E → W Tran	sect bet	ween line	201 and line 10	00' S of
TIME	TRANSPAR	RENCIES	SLIDE #		OUNTER	NOT	ES
1222	33	2	9-38	14	030	Ripple mount &	
						overhang & fi	
1223		4			038	Overhang, grou	up (outcrop
					0/0	& small fish	
1223				End reel	042	Ripples	
1225		5		14	063		
			Beg	in reel	0		
1226		5		15		Area of algae	(photo)
1227		6			034	Fish	
1227					051	SP 3, crabs	
122/					78	Turn off ligh	t
		7				50% overcast	
						mass	
1230					122	Camera out	
						Stop engines	
1236-30						Camera out	
1240					-	Camera & sled	
						and monitor o	ff

						Proj	ect _4	1009
Client	BLM		Rep Bar	kaloo		Date	8/17/	78
Work Are	a Easter	n Gulf o	f Mexico			Supe	rvisor	Bennington
Transect	Location	Area 7;	Line 205;	SP 10-25	and ta	rgets at SP	50	
	TRANSPAR	ENCIES	SLIDE	VIDE	TAPE			
TIME	PAGE	ROW	#	REEL	COUNTER		NOTES	3
0950				4	795	Begin de	scent	
1011				end 4		Camera	off bot	tom, head
						to line	205	
1013				start	5	Enrout	o line	205
1028					364	On line	headed	East
						lower ca	amera w	/engines
						dead		
1029					378	One eng	ine on	
1033					451	Bottom	in site	
1034					470	Between	SP 61	& 62
1040-10					570	SP 59	Bottom (	came into
1042					596	view &	athome	ter shows

1013			start 5	Enrout to line 205
1028			364	On line headed East
				lower camera w/engines
				dead
1029			378	One engine on
1033			451	Bottom in site
1034			470	Between SP 61 & 62
1040-10			570	SP 59 Bottom came into
1042			596	view & fathometer shows
				rise. Bottom fairly
				barren
1044-30				SP 57
1045			660	Bottom in view because
			680	of lower camera
1047-30				SP 55
1049	7 1		≃695	Begin pictures
1051			730	*Gorgonans
1051	2		735	*Dark tufts
1052			744	*Burrow
1053		7-1	756	*Sponge
1053		7-2	762	*Sponge
	3		770	Lots of Bioturbation &
				wormtubes
1055				51 & 50 coming over low
				rise
1057	4			Pictures 238' depth
1058	5		821	
1100			846	
1100-20	6	7-3	848	*Big fish at outcrop
		7-4		
1101-30		7-5	865	Starfish
1102	7	7-6	875	*Branching coral, fans
				on outcrop

Client BLM	Rep Barkaloo	Project 41069  Date 8/17/78
Work Area Eastern	Gulf of Mexico	SupervisorBennington
Transect Location	Area 7; Line 205; SP 60-7	

	TRANSPAR	RENCIES	SLIDE	VIDEO TAPE	
TIME	PAGE	ROW	₫ <sup>c</sup>	REEL COUNTER	NOTES
1103	8	1	7-7	884	*Sea whip & fish outcrop
1105		2	7-8	705	*Area of algae (dark)
				906	Outcrop and clumps of
					rubble
1106				5 924	Dark tuft scattered; not
					many signs of life
1108		3		940	Fish
				951	Depression
				932	Rock
1109		4		954	Fish
				957	Branching coral, fnas?
				961	Fish (benthic)
				965	Growth
			7-9	969	Sponge in depression
					may be due to wave action
			7-10	974	Sea urchens?
				979	On bottom medium coarse
					sand
1112		6		986	Thin sand over coarse sand
1112				994	Branching corals or algae
1113	<del></del>			001	Fish moved
4445				005	Dump of algae?
1114		7		015	SP 41 & 40
1115	9	<del></del>		025	SP 40 Very little on
					bottom; scattered dark
					clumps; Fathometer shows
					no relief SP 44-40
1117		3	7-11	45	Sea robin
1117-30				End tape	Fire still shots in
1117-30				5	between
1118-30		4		6	Detween
1120-45		6		056	Slightly off bottom
1120-43			7-12	030	Fathometer shows slight
			7-12		rise. Not detectable on
					camera
1123	9	6	7-13	133	Ouestion as to what tuffs
1123	9		7-13	133	are. If they extend off
					. bottom. Color?
1124-30		7		165	SP 35 Bring camera up
1.1.24-30				103	slightly

	Project 41069
Client BLM Rep Barkaloo	Date8/17/78
Work Area Eastern Gulf of Mexico	Supervisor Bennington
Transact Leasting Area 7: Line 205 SP 60-7	

Transect	Location	Area 7	; Line 205	SP 60-7		
	TRANSPARE	ENCIES	SLIDE	VIDEO		
TIME	PAGE	ROW	#	REEL CO		NOTES
1126	10	1			260	See scattered branching
						coral or algae
1127		2	7-14		222	Sponge w/fish
1129			7-15		260	Branching (basket shape)
1129		3	7-16		284	
			7-17			See slight rise
			7-18			beginning at SP 32
			7-19			
1132		5	7-20		340	Sea urchin
. 1133					363	Area of little change
						or signs of life
1134-30		6			381	Urchin
1135					400	Raise camera slightly
1137		7	7-21		425	
1141	11	2			497	Bottom sedant shown
			7-22			Still appears medium to
						fine sand
1143-30		3			533	
1144						SP 25
1144-45			7-23		558	Clump off to right
1146		4	7-24		580	Fish scared off bottom
						SP 24 fathometer shows
						slight rise
1148-30		5	7-25		614	*Collection of branching
						organisms
1151		6			651	Holes closing
1155					708	Holes closing
1157		7			745	Rock or shell
			7-26			
1159					764	SP 16
1200	12	1	7-27	6	775	Diadima
1201					790	Look for lump to left
1202					805	Patch of algae & rish
1202		2			812	SP 15
1202			7-28			Scattered patchiness of
			7-29			algae. May be outcroppin
						of hard bottom
1205		3			844	Polychaet holes
						SP 13

		Project 41069
Client BLM	Rep Barkaloo	Date 8/17/78
Work Area Eastern Gulf	SupervisorBennington	
m	. It 205 on 60 7	

	TRANSPA	RENCIES	SLIDE	VID	EO TAPE	
TIME -	PAGE	ROW	#	REEL	COUNTER	NOTES
1206					865	Shot of bottom sand
						Back to barren w/scattere
						tufts
1208		4			879	SP 12
1209					893	Burrow or depression?
1209-40					900	Scattered dark patches
1210-30		5			909	Fish
1211-30					920	Fish SP 10
1212-30		6			934	Raise continues slightly
1214			7-30		950	Patch of scattered tufts
			7-31			Increase holes & depressi
						may give sense of coarse
						bottom
1216		7 .			983	Back in more Homogenous
						area
1217					989	SP 7
1218-40			7-32		005	Starfish
1219	13	1			011	Rock or shell
1220-30					23	Fish
					30	Bottom Homogenous, black
						spots close up
1221						SP 5
1221					36 .	Starfish? Scattered dark
						organisms? Might be
						spories
1223	13	2	7-33	6	53 end	Fish
1224		3		7		
1225-30		4	7-34		25	Sponge
1225-30			, ,,		26	Fish
1226					56	Hermit crab?
1226		5			60	Sponge?
1220					67	6 clusts of polychaete
-					72	Fish
1227					85	Dark sponge
/					105	Bottom homogenous Barren
1229		6			132	Fish
					137	No artificial light
					201	good visibility. Can
						hardly tell difference
1230		-			156	Sponge

						Project	11005
Client	BLM		RepBai	rkaloo		Date	8/17/78
Work Area Eastern Gulf of					SupervisorBenning		
Trancat	Innotion	Area 7.	Line 205	SP 60-7			
mansect	r rocarion	nica /,	Lane 205	, 51 00 7			
	TRANSPAR	ENCIES	SLIDE	VIDE	O TAPE		
TIME	PAGE	ROW	· #		COUNTER	N	OTES
1230	13	6		7	156	SP 0	
1230					170	Stop engine	S
						Camera comi	ng up
1239			-			Camera out	of water
1241						On board	
					-		
	-						

#### UNDERWATER TELEVISION AND CAMERA LOG

		Projec	t 41069
Client BLM	Rep Barkaloo	Date_	8/17/78
Work Area Eastern Gulf o	f Mexico	Superv	isorBennington
Transect Location Area 6A	; line   line 101 (W → E) appr	ox 50 m S	of SP 5 ie

between 5&6. Transect line w/pts 0-10 w/6 = 80 m W of line 101

	TRANSPA	RENCIES	SLIDE	VIDEO TAPE	
TIME	PAGE	ROW	₽	REEL COUNTER	NOTES
1509					Camera over side SP-3
1515			· · · · · · · · · · · · · · · · · · ·	7 420	Camera decent tape on
1524	14	1		578	Bottom in site
1526				597	Fish
1526			6A-1	606	Fish
1527					Camera down, head to lin
1533			6A-2	712	SP -4
1.534				728	-3
1538			6A-3	775	Bottom in view SP-7 & 0
1539-40				794	Sea whip
1541			6A-4	817	SP 1
1542		2	6A-5	824	Depression
1543			6A-6		Bottom appears coarse
				833	Molusk
				834	Polychaete
			-	854	Bottom material not
1544			Andrew Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the		stirred by sled
					as much as this morning
					heavier, coarser
1545		3	6A-7	868	Gastroped
1546				874	Collection of tufts
1.547				894	SP 5
1548		4		907	Patchy area of dark
					material
1549		5		910	SP 6 water may be
2515					turbid
1551-30				941	Area of dark patches
1552		6	6A-8	947	Rubble material
1331			6A-9	7.7	About 1 ft
			6A-10		110000 1 1 1
1553		7	011 20	957	Accumlation of rubble
1554	15	1		7 970	Large shell or part of
2001					coral
1555			6A-11	978	Outcropping of land
					substrate
1556		2		995	SP 9-10
1556			6A-12	003	Fish outcrop
1557			6A-13	009	Starfish
1558-30			6A-14	020	End of line
1559-30			04-14	034	Bottom slid shows coarse
1000-00				034	sediment flying up

									Project 41069
Client	BLM		R	ep Ba	rkalo	0			
Work Area	Easter								Supervisor Benningt
Transect	Location	Area	6A	Lines	to	Line	101	50 r	m S of SP 5 (between 5 &
	TRANSPARI			SLIDE			O TAI		Noma
TIME	PAGE	ROW		#		REEL			NOTES
1601	15	13			·		065		End tape 7 Bring up
									camera off bottom
									Head to other E-W
1605						8	000		transect around SP 32
1003							000		Begin tape 8
									Camera in tow off bott
									to second line of Area
									6A
			-						
									1

#### UNDERWATER TELEVISION AND CAMERA LOG

41069

					Project	41069
Client	BLM		Rep Barka	100	Date	8/17/78
Work Area	a Easter	n Gulf	of Mexico		Superviso	r Bennington
					etween SP Line 3	L & 32
(≃50 m 1	N of SP 1	ine 32)	Run W to E			
	TRANSPAR	ENCIES	SLIDE	VIDEO TAPE		·
TIME	PAGE	ROW	. #	REEL COUNTER	NO	ES
1714	15	4	6A-15	0	Begin 9	
1716			6A-16	9 48	Atop of coral	
			6A-17			
			6A-18			
1716			6A-19	67	Star fish	
1716					SP 5	
1717		5		87	Area of thick	
1717			6A-20	97	Irregular lov	relief
					large rubble	
1717-30				119	SP 6	
1719		6	6A-21	135	Outcrop w/fis	sh, whips
					probably liv:	ing coral
1720				164	SP 7	
1721		7 .		190	Dark collect:	lon
					maybe algae	
1722	16	1		206	Bottom less o	coarse
					more homogene	ous
1724				264	Bottom coarse	er? may be
					effect of loc	oking down
1725		2		280	Urchin '	
1725-40				288	?	
1726					SP 11	

342

616

731

750

763

765

Fish

bottom

Fish

Urchin

Bottom in view

Just one engine

Alcyonarium?

Both engines Begin turn to brin us 180° turn and rerun transect E to W Speed took camera off

1728

1729

1714

1752

1755

3

4

6A-22

							Pr	ojec	t 41069 8/17/78	
Client BLM	Rep Barkal	00					Dε	te_	9/1///0	
Work Area Eastern Gu	alf of Mexico						St	perv	isor Benningt	on
Transect Location Are shot pt line 32 runn		to	101,	~	50	m North	of	and	parallel to	_

	TRANSPARENCIES	SLIDE	VIDEO TAPE	
TIME	PAGE ROW	#	REEL COUNTER	NOTES
1756	16 5		9 774	Rubble as sled hit
1756-40			787	SP 11
1756-40 1758			803	Regular bottom; sparce
1800	6		830	Fish
1800			839	Fish
1801			846	Sea whip SP 8
1803	7		868	Sea urchin
1803			873	11
1807			875	Depression
1807			. 877	Fish
18 04			886	Chunks of rubble scatter
				through out
18 05	**************************************		893	SP 7
1805			901	
1806	17 1		910	Algae
1807			916	Outcrop of coral on
4001				limestone
1807			920	Sponge
1808	2		929	Fish
1809			938	SP 5
			941	Fish bottom less coars
				again
1810	3		948	Larger chunks
				area of leafy
1810-40	4		958	More crowded distribution
1010 10				algae, chuncks, etc.
1811	5		967	Branching
2022			970	Sponge & whips
			975	Holes all over
1812	7	. 6A-23	979	Outcrop
1011			980	
			,,,,,	

									Project 41069
Client	BLM			Rep Bar	ka1	.00			Date 8/17/78
Work Are	a Easter	n Gulf	of	Mexico	)	-			SupervisorBennington
Transect E to W	Location	Area	6B;	Line	1	to 101	half	way	between 25 & 26. Run
	TRANSPAR		3	SLIDE	;		O TAP		
TIME	PAGE	ROW		#		REEL		ER	NOTES
2004						10	360		At Area 6B
									Camera in water; begin
									tape
2020	21	2							Begin maneuver to get co
									Fathometer shows bottom
2025									coming up to 270 ft
2035-									Fathometer shows two are
2046									of relief 280-270-280-
							006		270
2050							026		Both engines out; lower camera start fires
									End tape 10
2053									SP-1, Bottom on screen
2054							000		Begin tape 11
2054						11	000		
2055							37		Mud or fine sand bottom
2056		2							w/bioturbantion
							50_		Fish
							54		Gorgonian
							61_		Holes or depressions
									all over bottom
									Holes soft
2057		3		6B-1	<u> </u>		75		Fish along side hole
2057							88		Barren bottom all along
2058							96		Gorgonian
2059		4					144		Sled into bottom, looks soft & fine
							1.50		
2100							159		Fish

						Project 4106	9
Client	BLM		Rep Barka	100		Date 8/17	/78
Work Area	Easte	rn Gulf of	Mexico			SupervisorBen	ningtor
Transect and para	Locatio	nArea 6A. shot poin	Continuat t line 32	ion of	line E → W	line 101; ~50 m Nor	th of
TIME	PAGE	RENCIES	SLIDE #		COUNTER	NOTES	
			6A-24	9	983	Chunks rubble whi	ps,
18-13-30		4	6A-25		992	SP 3	
1815	19	2	6A-26		007	Flounder	
						Bottom less rubbl	e more
						sound but still s	ponges
						bottom cam up w/ce	oral
						rubble now dropp	
1816		5			019	Scattered sponges	
					0	Rubble & tufts	
					024	Holes	
1817		7			028	Fish	
1817					032	SP 1; fish, sponge	e
1819	20	1			61	End tape 9	
1820		2	6A-27			Begin tape 10	
1823					90	Camera off bottom	7
1833					318	Camera out of wate	
1835					360	Camera & sled on o	
1000					300	head for Area 6B	ieck
		Greates c	outcrops be	etween.	7 & 5		
			y between		7 4 5		
		Fathomete	r showed n	rise &	then quite		
		steep dro	p off 225	to 240	chen quite		
					· · · · · · · · · · · · · · · · · · ·		

		Project 41009
Client BLM	Rep Barkaloo	Date 8/17/78
Work Area Eastern (	Gulf of Mexico	Supervisor <sup>B</sup> ennington
	ea 6B; Continuation of E → W li t along shot pt line 25	ne between 25 & 26

	TRANSPAI	RENCIES	SLIDE	VIDEO TAPE	
TIME	PAGE	ROW	#	REEL COUNTER	NOTES
2102				11 201	Fish
2103				229	Sponge
2103	21	5	6B-2	233	SP 3
			6B-3	235	Hermit crab?
2104				257	Big hole
2105		6		266	Crab
2105		7	6B-4	278	Fish
2106				293	Burrow (big)
					sled in bottom
2107				312	Winch blew fuse
					sled in bottom; increase
					speed to get off bottom
2107-40				328	SP 5 Out engines
2109	22	1 .	6B-5	368	Lots of burrow hills &
2.407					accumulations of
					sediment
2111		2		399	Fish
2112			6B-6	410	SP 7
2116		3	6B-7	492	SP 9 out of area
2110			6B-8		
2119		4	6B-9	532	Squid, sea robin
2121			011-7	332	Prepcotting, complete t
2121					turn 180 and come down
					SP 25 W to E
2136		Alona Ci	25 W → E		Begun fixes, on SP line
2130		ALUIN 31	23 W . B		25
2139				830	Bottom in site
2140		5		838	Fish
2140 .					Depth ≃ 275'
2143		6		878	SP-1 Barren muddy or
2173					fine sand, holes
-,,					Title Balley Hoze

Gulf of N Area 6B;		W → E 25 VID	along S  EO TAPE COUNTER 888 918 936 954 963 63	AA L S. S. Bi AA S. S. C. T. a	Su 25.	Abort  NOTE   8/17/78 or Bennin after 1 testing the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state	
Area 6B; sect along CCIES COUNTY 7 1 2 3 3 5 E + 1	Transect 3 SP line SLIDE # 6B-10 6B-11	W + E 25  VID REEL 11	along S  EO TAPE COUNTER 888 918 936 954 963 63 11	AA L S. S. Bi AA S. S. C. T. a	long ines P 6 urrownimal top ioming un E long	NOTE NOTE NOTE NOTE NOTE NOTE NOTE NOTE	off bot:
CCIES COUNTY  TO THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF T	SP line SLIDE # 6B-10 6B-11 6B-12	VID REEL 11	EO TAPE  COUNTER  888  918  936  954  963  63  11  12  382	AA L S. S. Bi AA S. S. C. T. a	long ines P 6 urrow nimal top i oming un E long	NOT SP 25 of bio V L jump Tixes of 3 about to W	off bot
OW 7 1 1 2 3 5 E + V	# 6B-10 6B-11 6B-12	REEL 11	COUNTER 888 918 936 954 963 63 11 12 382	A. L. S. Br A. S. C. C. r. a	ines P 6 urrov nimal top i oming un E long	of bio	off bot:
7 1 2 3 5	6B-10 6B-11 6B-12	End I	888 918 936 954 963 63 11 12 382	A. L. S. Br A. S. C. C. r. a	ines P 6 urrov nimal top i oming un E long	of bio	off bot:
1 2 3 5 E + V	6B-11 6B-12	End I	918 936 954 963 63 11 12 382	L. S. B. A. S. C. C. T. a.	ines P 6 urrov nimal top i oming un E long	of bio	off bot:
2 3 5 E → T	6B-11 6B-12		936 954 963 63 11 12 382	S: Bi A: S: C: r: a	P 6 urrow nimal top i oming un E long	v L jump Lixes o g about to W	off bot:
3 5 E → V	6B-12		954 963 63 11 12 382	Bi Ai Si Co	urrow nimal top i oming un E long	ixes of about to W	off cours
5 E → 1			963 63 11 12 382	A: S: C: r: a.	nimal top i oming un E long	ixes of about to W	off cours
5 E → 1			63 11 12 382	S C	top i oming un E long	ixes o about to W	off cours
$E \rightarrow t$			11 12 382	C r a	oming un E long	g about	180° t
$E \rightarrow t$			11 12 382	r a	un E long	to W	
$E \rightarrow t$			382	a	long		ne 25
$E \rightarrow t$			382			SP lin	ie 25
		Begin 1	382				
	V			- E			
	V		409	T.			
6					ish		
6			417	S	led s	shows s	oft fin
6					edime		
			429	е	el?		
			435	S	P 0		
				S	e em 1	o be e	els on
					otto		010 011
7			455		ish,		
·			472		urrot		
			478			crabs	
2				E	e1 or	hotto	om ?
2							· DOLLOW
						irb.	
_	3 4 5	3 4	3 4	488 2 498 515 3 539 4 545	488         F           2         498         E           515         E           3         539         S           4         545         S	488         Fish           2         498         Eel or           515         Eel st           3         539         Sea WI           4         545         SP 3	488         Fish           2         498         Eel on bott           515         Eel swim off           3         539         Sea Whip?           4         545         SP 3

								Pro	ject	41069		
Client _	BLM	Rep	Barkalo	0				Dat	e	8/17/	8	
Work Area	Eastern	Gulf of Mex	ico					Sup	ervi	sorBeni	ingto	on
Transect	Location /	Area 6B: Run	line E	→ W	1 .	101	and	along	shot	point	line	25

	TRANSPA	RENCIES	SLIDE	VID	EO TAPE	
TIME	PAGE	ROW	#	REEL	COUNTER	NOTES
			E -> W			Long SP 25
2228				2	582	SP 4
2227-30					591	Mound
2228-45					595	Burrow
2229					606	Crawling on bottom
2230	24	6			625	Fish
2231		7			641	SP 6
2233					665	SP 7
2234	25	11			678	Mound - could be what
						showed up on side scan.
						Not a burrow
2237		4			722	Fish along bottom
2238		5 .	6B-13		731	Mound & hole mound est.
						up to 3 ft. across
			6B-14			1 ft. high. Most 6" to
						1 ft.
2339		6			752	SP 10
2239					757	Hole
2240		7			772	Starfish
2241			6B-15		778	Fish, sea robin
2242	26	1	6B-16		785	Fish & crabs?
2243			6B-17		802	Eel may be algae just
			6B-18			before it
2243						Camera off bottom
2244					819	Camera coming up
2245						Engines killed
2258						Camera up on deck
2302						Head to Area 7 for lane
						count
						<u> </u>
~~~~~						

						Project 41069
Client	BLM		Rep Smith	1		Date 8/22/78
Work Are	a Easter	n Gulf of	Mexico			SupervisorBennington
Transact	Location	Area 4	line 11/4:	line !	s hetween	SP lines 21 & 22 and
to line	114. SP	4 = line	114. SP	3 ≃ Wes	st side of	SP lines 21 & 22 and side scan. Time is EDT
	TRANSPAR	ENCIES	SLIDE		EO TAPE	
TIME	PAGE	ROW	#		COUNTER	NOTES
1231				15	365	Start recorder Are west of line 114
						Camera off side
1237	34	1			468	Lite on
1249					667	Bottom in view
						Soft, bare bottom
					737	Sea whips
1252						Fix for camera deploymen
1301					831	Maneuver to beginning of
						transect
				1 15	1075	
1322			New tape	16	0	SP-3
1326					118	-1
1327		2			136	Bottom .
1331		4			228	SP 1
1332		5			254	Sea whips
1332					262	Fish & sea whips
1333-30	)	6			281	SP 2
1334					289	burrows, whip & fish
1334					298	fish
1335	35	1			303	sled
1336			4-1		324	SP 3
			thru			
1337		3	4-6 4-7		348	0.1
1337		3	thru		340	Outcrop
			4-9			
1338			4-9		364	Big Pinnacle
1330					366	Lot of fish; coarser sand
1339		4			393	finer sediment - holes
1340					412	SP 5
1342					441	Leaving bottom
1344-30					489	SP 7
1344-30					409	End transect turn about
1407		5			831	porpoise turn about
						A Comment of the Comm

				riojeci	41007
Client BLM	Rep Smith			Date _	8/22/78
Work Area Eastern C	Gulf of Mexico			Superv	isor Bennington
Transect Location Ar	ea 4; Line 114	On Line 32 W	→ E		

TRANSPARENCIES		SLIDE VIDEO TAPE				
TIME	PAGE	ROW	#		COUNTER	NOTES
1411	36	1-3		16	881	Porpoises & baby
						Still enroute to 2nd
						transect area
1427			E	nd 16	1068	
1428			New tap	e 17	0	93.0
1433-30					145	SP-2
1434-30					165	Holes (bioturbation)
1435					195	Algae tuft
1435					199	SP-1
		3				Slow rise in bottom
1437					237	mud depression
						ski
1438		4			248	SP 0
1438					254	Holes in cluster
1438			4-10		258	
1438					262	Organisms
					270	Sea whips
1440		5 .			291	Urchin
1440					295	SP 1
1441					317	Whips 5/m <sup>2</sup>
1441					321	Hole
					327	Check texture
1442		6	4-11		338	Starfish
1442					346	SP 2
1443		7	-4-12		359	Rise begins
1444			4-13		375	Rubble area
2777			4-14		387	SP 3
1445			4-15		392	Pinnacle, hard
2772					396	Pinnacle gouge
1445			4-16		400	Pinnacle cut engine
1446	37	1			418	Sled off bottom, bent
1448					455	Camera coming up, dri
21.70						TV light out
1459					640	Camera out of water
1509					785	On board, recorder of
1510						Fix
1523						Under way to line 108
1625						Arrive line 108

	Project 41069
Client BLM Rep Smith	Date 8/22/78
Work Area Fastern Gulf of Mexico	Supervisor Bennington
Transect Location Area 4; Line 108 Transect line 60 N → S SP 59-90	m W of line 108 Run

	TRANSPARENCIES		SLIDE	VIDEO TAPE		
TIME	PAGE	ROW	#	REEL	COUNTER	NOTES
1651					785	Camera over side
						Recorder on
1656						Deployment Fix 1134 92
						1928 67
1712					1037	Maneuvering to start
						of transect
1715			End	tape	1065	
				17		
1718				18	0	
1741					520	Arrive on line, cut
						engine lower camera
1743					539	bottom
1743					547	SP 56
1745		-			577	Depressions & small
						holes Bare, turbid
1745					583	SP 57 274'
1746					594	Sand \$
1746					600	Sand \$
1747	38	1			619	SP 58
1748					631	Fish
1749		2			640	Fish, Depressions 1 ft
						in diameter small hill
						6" high
1749-45					645	SP 59
1750					662	Humrock appearance
1751-30					675	Skid soft fine bottom
1752-15					683	SP 60
1753		3			697	Very few signs of life
1753-15					704	Sand \$
1754					714	Fish
1754-30					718	SP 61
1755			4-17		725	Sand \$
1756		4			732	Urchin
1756-45					749	SP 62 Still turpid
1758			4-18		767	Fish
1759		6			778	Fish SP 63
1759					783	Fish

			Pro	ject <u>41069</u>
Client BLM	RepSmi	th	Dat	e 8/22/78
Work Area Eastern Gul	f of Mexico		Sup	ervisor Benningto
Transect Location Area	4; Line 60 m	W of Line 108	Run N → S	SPs 56-90
TRANSPARENCIE	S SLIDE	VIDEO TAPE		

	TRANSPAL	RENCIES	SLIDE .	VIDEO TAPE	
TIME	PAGE	ROW	#	REEL COUNTER	NOTES
1759	38	6		18 788	Fish
1759				792	Sand \$
1801				805	Fish SP 64
1801		7		812	Fish
1801			4-19	814	Starfish
1802				818	Hermit crab
1802				830	Sand \$
1803-30				838	SP 65 Depth 280'
1804				853	Sand \$ Still fine san
					looks soft Depression
					mounds all over
1805-30				866	ŠP 66
					1-2 sand \$ every 100'
1807				885	Sled hit
1808	39	1		895	SP 67
1810		2		922	SP 68
1810-30				925	Fish
1811				937	Sled in sed.
1812				945	Sand \$
1812-15				949	SP 69
1814				975	SP 70
1815		3		978	Sand \$
1816-50				1000	SP 71 humrocky bottom
1817		4		005	Fish
1817-45				011	Fish & rubble
1819			4-20	025	Fish & SP 72
1819				031	Hermit
1820		5		037	Fish
1820				043	Fish & sand \$
1821				051	SP 73
1822		6		End tape 065	
				18	

							Project	41069	
Client BLM		Rep	Smith				Date	8/22/	78
Work Area Ea	stern Gulf	of Mex	ico				Supervis	oBenni	ngton
Transect Loca	tion Area	4; Lin	e 60 m	Wo	f line	108	Running N →	S SP	50-90

	TRANSPA	RENCIES	SLIDE	VIDE	O TAPE	
TIME	PAGE	ROW	#	REEL	COUNTER	NOTES
1823	39	6	Begin	tape	0	1 Organism/10 m <sup>2</sup>
				19		
1823					10	SP 74
1825					77	SP 75 ≃285'
1827					112	Flounder
1828		7			135	SP 76
1830					190	SP 77
1830					200	
1831					225	
1832	40	1			244	SP 78
1834			4-21		279	Fish
1834-50					293	SP 79
1835-30					304	Burrow w/ fish
1837					342	SP 80 290
1838		3			362	Depressions
						Small pok marks, are
						larger & becoming more
						numberous
1839-30					383	Fish SP 81
1839					391	Bottom rough. Check
						off to left
1841		4			426	SP 82
1841					430	Linear depression
1842		***************************************			441	Large holes or depression
1843		5			446	Large hole
					456	Tuft?
1843-45					466	SP 83
1846		6			505	SP 84
1847					525	Whip
1847					530	Tuft
1847-45					534	Ho1e
1848		7			540	SP 85
					563	Another area of increase

				Project	41069
Client BLM	Rep	Smith		Date	8/22/78
Work Area Eastern Gul	f of Mex	ico		Supervis	orBennington
Transect Location Area	a 4, Line	60 m W of	Line 108	Running N → S S	P 50-90

	TRANSPAR	RENCIES	SLIDE	VIDEO TA	PE	
TIME	PAGE	ROW	#	REEL COUN	TER	NOTES
1849-45				19 56	7	Fish
	41	1	4-22	54	4	Hole w/something
1850-30				57	8	SP 86
1852				59	7	Numerous projections
						of sediment
1852-30				61	3	SP 87
1853		2		61	9	3 holes
1854				62	7	Shiny fish,
1854			4-23	63	7	Outcrop, see bottom
1854		3		64	3	SP 88
1856-30				66		SP 89
1857		4	4-24	67		Coarse sed.
100,		· · · · · · · · · · · · · · · · · · ·	4-25	68	4	Outcrop angel fish
1858-30		6		70	0	SP 90
1030 30				70		Outcrop small
1859		7	4-27	70		Alcyonoim rubble
1037						& coarse sand
1859	42	1		71	4	Coarse sand
1900	72			71		Bushes, fish & rubble
1700				72		Bushes, whips
1900		2		73		SP 91 300'
1900		3	4-28	73		Bushes & outcrop
1901		5	4-20	74		Fish
1902				75		Bush
1902				75		Outcrop w/algae
1902				13		Bottom coming up
1903				76	1.	SP 92
1903-30		6		76		Outcrop
1903-30				77		Finer sand, pok holes,
					7	slight depressions
1905-15				79	7.	SP 92
1905-15				80		Camera coming up
1908				- 00		SP 94
1908						31 94

	DIM		_			Project 41069  Date 8/22/78
			RepSmit			Date 0/22/16
Work Are	a Easter	n Gulf o	f Mexico			Supervisor Benningto
Transect	Location	Area 4;	Line 60 m F	of 1	ne 104	SP 75-90 Run N → S
	TRANSPAR	RENCIES	SLIDE	VID	EO TAPE	
TIME	PAGE		#		COUNTER	NOTES
1916				19	945	Light off
1920					987	Camera break surface
1923					1015	Camera on deck
2053					1018	Camera our side
2057-30			Pad	19	1067	monitor & recorder on Ship in Area 4, Line 104
2031-30			DIIG	17	1007	engines dead
2100			Star	t 20	0	Fix
2104			- Ctar		113	
2110						Moving onto line
2123						On line
2123					526	SP 69
2125-45					560	SP 70
2127	43	1 .			580	Whip
2127-45					589	SP 71 Bottom is fine
						sediment. Signs of bioturbation
2128					504	Sled on bottom. Small
2120					304	holes & depressions
						small 6" mounds to give
						hummocky
2129					618	SP 72
2130-30					628	Sea wip
2130					632	Sand \$ ≈ 260'
2111					648	SP 73
2132		2			653	Worm holes
						Very few visible life
			4-29		770	forms
			4-29		673	Eel
2133-30			4-30		676	SP 74
2134		3	4-31		683	Eel
			7 32			A V v ds

		Project 41069
Client BLM	Rep Smith	Date 8/22/78
Work Area Fastern	Gulf of Mexico	Supervisor Bennington
Transect Location	Area 4 Line 60 m E of line 104 SP	75-90 N → S

	TRANSPAL	RENCIES	SLIDE	VIDEO TAPE	
TIME	PAGE	ROW	#	REEL COUNTER	NOTES
2135				20. 701	Eel
2135	43	4	4-32	706	SP 75
2137			4-33		Continued hummocky
			4-34		bottom, ie shallow
					depressed
2137				734	SP 76
2139		5		762	SP 77
2140				774	Eel .
2140-50				781	Eel straight down
2140-15		6		789	SP 78
2143				816	SP 79 .
2143				821	Sea whip
2144	44	1		537	Sea whip & crabs
2145		2 ·		842	SP 80
2146		3		860	Object
2147		4		868	SP 81
2147				875	Crab
2147				877	Eel-probably nite
					phenomenon
2149				892	SP 82, Whip, object of
					to left
					fine sand hard botto
2150				912	Sled on bottom
2151		5		919	SP 83
2151-20			4-35	921	Fish & crab
2151-30		6	4-36	924	Crabs, sand \$
2152-20			4-37	933	Fishes & eels & crabs
2153				. 942	SP 84
2153				946	? off to right
2154		7		957	Still fine sand little
					mounds 6 x 2" small
					holes & depressions
2155	45	1		968	SP 85

Client	DIM		D	C-4+	L				Proje	ect <u>41</u> 8/	069 22/78
			_								
Work Are	a Easter	n Gulf o	of Mexi	co					Supe	rvisor	Bennington
Transect	Location	Area 4	Line	60 m	E of	line	2 104	SP 75-9	0 N	→ S	
	TRANSPAR		SLI				TAPE				
TIME	PAGE 45	ROW 1	#				DUNTER		1.0	NOTE	SS
2156	45	1			20		976 991		nd \$ 86		·
2157-50							001		a whip		
2158-20							006		ft & i		
2159		2					015		. 87	2311	
2201							040		88		
2202				nd re	01 20		080	SP	_88		
				na re	المساحل		_000	101	bster		
2203		3	P.c	gin r	001 2	n	0		89		
2204-50	1	4	1)0		20				sh		
2205		5					061		90		
2205-70	1						070		f to I	left	
2206							086		nd \$		
2207		6					117		91		
2208-10							140		ab		
2209-00		7					140	SP	92		
								Car	mera c	off bo	ttom
2211									93		
2214-30									gines		
2228							561			roff	sled on
									ck		
						fra	ime	CO	unt 10	)5	
-											<del></del>
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						-					
						-					

									Pro	ject	:	4106	9
Client	BLM		Rep Smi	th					Dat	e	8/2	5/78	
Work Area	Eastern	Gulf of	Mexico						Sup	ervi	sor	Benn	ington
Transect	Location	Area 3,	Line ≃ 9	0 m :	N of	Line	205,	$W \rightarrow$	S	SP	34-	32	
	TRANSPARE		SLIDE			TAP							
TIME	PAGE	ROW	#			COUNT	ER				OTE	5	
					21	561							
0901						562			nera	ın	wate	r	
0916								Fi					
0920						≃848			ttom				
0924	46	1				≃890			ots (				
								mar	neuv	erin	g in	to v	7ind
0928						942							
0933						003		int	to W	ind,	slo	wer	speed
2937		2				048		Bot	ttom	in	view	-	
						075		. At					
0939		3	3-1									stir	ng drift
0940		4		d 21		087							
0940	<del></del>	5	Start			000							
0943-45		6	DLate			052		61.	ed o	n ho	tton		
0943-43						052			d so				
									amet				NO. C
0946						122							bottom
1007-30						561			ed o				DOLLOW
1007-30						301			npre				
1055						564							water,
1033						304			ifti				
1101						640			ght		11110	Car	500
1101						040			mera		arir	0	
-I103						669		34		10%	CLLI	. 6	
						681		Fi					
1104						725			x weri				
1107						767		LOV	MELT	ng			
1110									11				
1113						809							
		<del>-</del>											

# WOODWARD-CLYDE CONSULTARIS -

						Project 41069
Client	BLM		Rep Smith	1		Date 8/25/78
Work Area		n Gulf o	f Mexico			Supervisor Benningto
Transect	Location	Area 3.	Drifting NE	→ SW	≃ 210°	over Line 205, SP 32-34
	TRANSPAR	ENCIES	SLIDE		O TAPE	
TIME	PAGE	ROW	# .		COUNTER	
1215	50		3-11	23	829	Starfish
1222			3-11		926	
1223		6			940	Camera off bottom
1227					978	Camera to high clam
						(250' cable )
1230						Head NE to Line 101
1244		1	End	23	192	SP 67
1302			Begin	24	0	Manuvering to NW line
						Camera in tow (250'
						cable) Bottom depth 38
						Stop to pull sled out
1310						Sled on board
1324					479	fix; continue to XW
1325						transect, tape off
1313						,
						· · · · · · · · · · · · · · · · · · ·
		_~				

				Proj	ect 41069
Client BLM	Rep	Smith		Date	8/25/78
Work Area Eastern Gul					rvisorBennington
Transect Location Ar	ea 3, Drift	NS - SW	≃ 210° ov	ver line 205	between SP 32-3

	TRANSPA	RENCIES	SLIDE	VIDEO TAPE	
TIME	PAGE	ROW	#	REEL COUNTER	NOTES
				23 385	Algae w/growth
1149	48	5		388	Drifting again
1150				406	
1150-35		6		411	Holes
1151				426	Crab
1151-35				438	Crab ·
1152		7		447	
1152-50	49	1		463	Fish in burrow
1153				467	
1153-30			3-9	474	Fish in burrow
1155-30		2		514	Fish " "
				518	Hole
1156-50				536	? organism
1159				579	Continued hummaky
222					very few organisms
					fine sand
1200-45		3		607	Starfish ·
1200-55				160	Fish
1201-45				624	Sled hitting bottom
1202-45				641	Large hole & mound
1203-15		5		649	Whip
				650	crab
1205	Actu	al interes	st pt	677	Starfish
1207				708	360
1207-5		7	3-10	713	Pour of fish and mounds
1207-45				720	Whip
1207-45	50	1		721	Big mound
1207-45				743	Bottle?
1210-15				762	Big hole to right
1210-15				766	Big hole to left
1211		2		771	Whip
1211-30		2		780	Mound 10-12"
1211-30				7,00	Troute 20 au

							P	roje	ct 4106	59	
Client	BLM	Rep	Sn	ith			D	ate	8/2	/78	
Work Area	Eastern	Gulf of Me	xico				S	uper	visorBe	min	gton
Transect	Location	Area 3. D	rift N	NE → SW	≈ 210°	over	line	205	between	SP	32-3

	TRANSPA	RENCIES	SLIDE		EO TAPE	
TIME	PAGE	ROW	₽	REEL	COUNTER	NOTES
1115				22	837	Lowering camera
1120	46	7			902	11 11
1120-30					908	Bottom in view
					912	Soft hummocky bottom,
						fine sediment, little holes, 6" - 12" depres-
						holes, 6" - 12" depres-
						sions
						visibility 3-5"
1122	47	11			927	
1122-30			3-2		933	Fish stays in hole
			3-3			
1125-30					968	Fish in burrow, 12"
1127		2			987	Large hole
1129			3-4		1014	Fish in hole
			3-5			
1130		3			1025	Fix
1130-50		4			1035	Fish in hole
1134					1073	Cloud of sed from sled
			3-6		1079	Starfish
1135		5		d 22	1092	
			3-7			
1137-45		6	Begin	23	92	
1139					136	
1139-30		7			148	Crab
						Bottom shell hummocky w/
						depressions & mounds
1139-45	48	1			162	Starfish
1142					221	
1142-15					223	Fish
1143-15		2			250	Whip some mounds w/holes
						others w/out
1145-35		3	3-8		307	Fish
1147		4			340	Depression w/shell
1148					361	Whip

			Project	41069
Client BLM	Rep	Smith	Date	8/25/78
Work Area Eastern Gulf	of Mexico		Supervis	oBennington
Transect Location Area	3; Line 50 N	and across S.P. 66 of	line	103, W → E

	TRANSPAI	RENCIES	SLIDE	VIDI	O TAPE	
TIME	PAGE	ROW	₫:	REEL	COUNTER	NOTES
1424				24		Arrive site
1432					479	Camera over side
1434						fix
1434						Cable out of shive, sto
1450						okay, lower
1452						out of shive again
						change shiv
1514					60	On board
1514			E	nd 24		Parplotting course
1530						Underway for line 103
						SP 66 ·
1630						Arrive, camera over
1631						fix
1.631			Ве	gin 25		. Tape on, light
1634					090	Camera lowering
1654	50	7			512	Bottom in view
1656					. 549	Begin maneuvering
1736			End	25	1089	Maneuvering
L740	51	1	Ве	gin 26	0	lose station signal
1743				J	84	Bottom
744-30		2	3-12		126	Craters - mound about
745					146	Mound or outcrop
1746		3			177	Whip, soft sand, fine
						3-5' visibility
		4			231	sled shows hermit
749					297	Hidden burrow
749 1751 1752					306	Whip

						Project	41069
Client	BLM		Rep	Smit	:h	Date	8/25/78
_			of Mexico				or Benningto
Transect	Location	Area 1	3, Line 50 N				
	TRANSPAR	ENCIES	SLIDE	VID	EO TAPE		
TIME	PAGE	ROW	₽	REEL	COUNTER	NO	DTES
1753				26	336	355' depth	
1756		5			378	Fish in bur	
						△ to star	bord engine
1756-50			3-13		398	Mound	
1759		6			444	Whip	
1800					472	Fish	
1801		7			484	Whip	
1802-30		1			499	Whip	
1803-45			3-14		-520	Mounds & ho	1e
1804-30					535	Fich	
1805		2	3-15		543	Lots of 6"c	raters
1807-10		3			579	Big holes	
1809					592	Big holes Hummocky ap	nearance
1007		4				named tray up	Pourunce
1811					642	Camera off	hottom
1828		<del></del>			072	Camera on b	oard
1020						Tape off	Jaru
					88-7	Tupt. Ozz	
		·					

### UNDERWATER TELEVISION AND CAMERA LOG

EE ROW		REEL 26 and 26 and 27	913 950 1000 88 0 137 281 460 687	NOTES Light on, recorder on Camera in water Fix Lowering " 230' water Begin manuvering  Maneuvering 234' Maneuvering Slowing
		nd 26	913 950 1000 88 0 137 281 460	Camera in water  Fix Lowering " 230' water  Begin manuvering  Maneuvering 234' Maneuvering
			950 1000 88 0 137 281 460	Fix Lowering " 230' water Begin manuvering  Maneuvering 234' Maneuvering
			950 1000 88 0 137 281 460	Lowering " 230' water Begin manuvering  Maneuvering 234' Maneuvering
			0 137 281 460	" 230' water Begin manuvering  Maneuvering 234' Maneuvering
			88 0 137 281 460	Begin manuvering  Maneuvering 234' Maneuvering
			0 137 281 460	Maneuvering 234' Maneuvering
			0 137 281 460	234 <sup>1</sup> Maneuvering
	Beg	in 27	137 281 460	234 <sup>1</sup> Maneuvering
			281 460	234 <sup>1</sup> Maneuvering
			460	
				Clavino
			687	Clarifoo
				STOMTHE
			704	SP-3 245'
			746	Lowering
			767	Bottom
3 1			775	Sled hit bottom
				Coarse sand, harder
	3-16		786	Squid & Ink
			794	Eel swims to camera
	3-17		802	Crinoid
2	3-18		808	SP 1
	3-19		832	Hit pinnacle
	thru			
	3-24			
4	· 3-25		848	Higher pinnacle SP 3
			872	Lowering again
5	3-26		882	Algae?
6			894	
				Coarse sand, sled
	3-27		934	Rise?
	4 5	3-17 2 3-18 3-19 thru 3-24 4 3-25	3-17 2 3-18 3-19 thru 3-24 4 3-25	3-17 802 2 3-18 808 3-19 832 thru 3-24 4 3-25 848  872 5 3-26 882 6 894

Client	BLM		Rep	Smi	th		Project Date	41069 8/25/78
Work Area	a Easter	n Gulf of	Mexico					or Bennington
Transect 108	Location	Area 3	W → E parra	llel	& ½ way	between	SP 37-38	accross line
	TRANSPAR	ENCIES	SLIDE	VII	EO TAPE			
TIME		ROW	#	REEL	COUNTE			TES
2206				27	956	Ree		
2207	53	7			969	Beg	in move t e 106	0
			3-28					
2200			3-29		002	Bri	ng camera ing north	off bottom
2209			3-30		993 1018	.100	Ing norts	1
2211					1010			
2214					052	Spe	ed tape i	ο Δ
2215			End	27	1092			
		*						

				Project	410	)69
Client BLM	Rep	Smith		Date _	8/:	25/78
Work Area Eastern Gulf	of Mexico			Supervi	sor ]	Bennington
Transect Location Area	3 W → E	parallel & ½ v	vay between	sp 35	& 36	106

	TRANSPAR	RENCIES	SLIDE	VIDEO TAPE	
TIME	PAGE	ROW	#	REEL COUNTER	NOTES
2216-30	55	1		egin 28 0	
2218			3-31	51	Rise or outcrop
2218-20		3		59	Outcrop
2219		4	3-32	80	
			3-33	100	
2220				103	Rise
				. 115	Off bottom
2222				160	△ course to run so
					cable off to
					Fathometer not in sinc
					w/TV camera
2223		5		185	Outcrop below
				215	Fathometer shows fise (Fi
2224-30					Bring up = Area of interes
					Depth 255 ft
2226				258	to 0750
2228				300	Current is very strong
					was difficult maintaining
					W → E. That is what is
					pulling our sled off to
					side.
2229				320	Running at 2 engines
2229-45				335	60 to 050°
2230-45				345	Cut both engines
2232				378	Camera coming up
2242				563	Lite out
2243				575.	Video tape off
					Camera on board Head
					to platform

Project 41069
Date 8/26/78
SupervisorBennington
NOTES
Camera over side
Tape on, lowering camera
Lowering dub info
Begin maneuvering to start
≃ area of pinnacles
At area
Slowing
Speed tape to end to $\triangle$
Heading to begin draft
Camera of 250' enroute to
start. Pinnacles on
fathometer
Trying to stop at southern
end of transit 365'
Cut engines, drifting :
Camera ≃ 250' bottom 365'
waiting for fathometer to
indicate pinnacle area
Minute fixes
Camera down to 300'
Drifting
Going down a bit Bottom
355'
Bottom
Coarse sand
Hole w/ white thing
Sed. kicked up
Coming off bottom, expect

					Project 41069
Client	BLM	Rep Smi	th		Date 8/26/78
ork Area	Eastern Gulf	of Mexico			SupervisorBennington
ransect	Location <u>Area</u>	3; Line 112,	SP 97	7-100	
	TRANSPARENCIES	SLIDE	VID	EO TAPE	
TIME	PAGE ROW	#	REEL	COUNTER	NOTES
1024			29	759	Camera @ 320'
1025	56 5				347
		3-34			Pinnacle on fathometer
1026		3-35		789	Pinnacle below left of
		3-36			10' camera line
		3-37			
1027-45				795	Pinnacle peak in site
1028	6	3-38		802	Whips
		thru			
1027-50	4 & 5	3-52		813	Amberjacks
1030				842	Visibility limited, camera
					≃ 315' bottom 365'
1037				931	
1039				936	Camera coming up
1040					last fix
1047				052	Light off
1054		End	29	1098	Camera on board
1105					Head platform

			Project	41069
Client BLM	Rep	Smith	Date _	8/26/78
Work Area Eastern Gu	of Mexico		Supervi	sor Bennington
manage to the Am	2. Iina 10	1 CD 67 Dun U -> F		

	TRANSPA	RENCIES	SLIDE	VISEO	TAPE	
TIME .	PAGE	ROW	#	REEL CO	DUNTER	NOTES
1500				30	0	Camera over, light on
1516					258	Camera at bottom
1518					300	Maneuvering to start
1524					417	11 11
1532					541	11 11
1537-15					635 .	Slow down, lower sled
1537-50					647	SP-3
1540	58	2				
1541		- 3			695	SP 0 bottom
1541-45					700	Sled on bottom
1542-10		4			707	
			2-1			Visibility 5-6 ft.
1543		5 .	2-2		721	
1544		6			736	
1544-30					742	Sand dollar
						fine sand, slight
						bioturbation
1545-10		7			750	
1547		1	2-3		778	Flounder
1548		3			788	Fish in burrow '
						Bottom ≈ 240' flat
1549		4			804	
1549-40					810	Tufts
1550			2-4		821	Shell fragments
					833	Depression w/crustacio
1551-40		5			836	Hole. Black tufts or
						blades common 3/m²
1552-50		6			835	Sand \$
1553					865	SP 3, fish, depression
1554		7			869	
					877	Sand \$ 1/10 ft.
1555		1			880	

### UNDERWATER TELEVISION AND CAMERA LOG

Project 41069

Transect Location	Client	BLM		Rep	Smit	h	Dat	te	5/20//8	
TRANSPARENCIES	Work Area	a Easter	n Gulf of	Mexico	)		Su	pervisor <sup>l</sup>	Benningt	on
TNRE	Transect	Location	Area 2	; Line	101 SP 67	7 Run W →	Е			and discourse
TNRE		TPANCDAD	ENCIPE	STIDE	. VID	FO TAPE				
1555-25   30 884   2' diameter hole	TIME							NOTE	S	
1555-50			100				2' dia	meter ho	le .	
1552   60   2   893										
1557-20   909   Gorgonian?   1557-45   910   SP 5   1558   3   918   Sand \$   1559   931   1559-45   4   940   Whip   1559-45   5   944   Fish   1600-15   5   944   Fish   1601   6   954   White coral in depression   1601-50   7   964   1 ft. diameter hole 6" dec   1603   61   1   929   1604-10   2   2-5   990   Rise (outcrop)			2			893				
1557-45		)				909	Gorgon	ian?		
1558   3   918   Sand \$   1559   931   1559-45   4   940   Whip   1600-15   5   944   Fish   1601   6   954   White coral in depression of the state of the sta						910				
1559   931   1559-45   4   940   Whip   1600-15   5   944   Fish   1600   16   6   954   White coral in depression   1601   6   954   White coral in depression   1601-50   7   964   1 ft. diameter hole 6 dec   1603   61   1   929   1604-10   2   2-5   990   Rise (outcrop)   2-6   1604-45   3   2-7   997   "   "   2-8   1606   5   1014   1607   1025   0ff bottom   1610-50   End 30   1066   1614   Begnin 31   0   Camera coming up   1617   996   Camera out of water   1618   112   0n board   1000-1000   100			3			918	Sand \$			-
1559-45										
1600-15   5   944   Fish   1601   6   954   White coral in depression:   1601-50   7   954   Tf. diameter hole 6" dec   1603   61   1   929   1604-10   2   2-5   990   Rise (outcrop)   2-6     1604-45   3   2-7   997   "   "   1606   5   1014   1607   1605   1025   0ff bottom   1610-50   End 30   1066   1614   Begin 31   0   Camera coming up   1617   096   Camera out of water   1618   112   0n board   1600-1601   1600-16		5	4				Whip			
1601   6										
1601-50   7   964   1 ft. diameter hole 6" dec						954	White	coral in	depress	ion?
1603		)				. 964				
1604-10         2         2-5         990         Rise (outcrop)           1604-45         3         2-7         997         "         "           2-8						929				
1604-45   3   2-7   997   "   "				2-5			Rise (	outcrop)		
1604-45         3         2-7         997         "         "           1606         5         1014         1025         0ff bottom           1610-50         End         30         1066         1066           1614         Begnin         31         0         Camera coming up           1617         996         Camera out of water         112         0n board	1004 10									-
2-8     1014     1617     1625   Off bottom   1610-50   End 30 1066   1614   Begnin 31   O   Camera coming up   1617   096   Camera out of water   1618   112   On board   1617   On board   1618   On board   1	1604-45	5	3			997		H		
1606         5         1014           1607         1025         Off bottom           1610-50         End         30         1066           1614         Begnin 31         0         Camera coming up           1617         096         Gamera out of water           1618         112         On board	1004 4-									-
1607   1.025   Off bottom   1051   1052   Off bottom   1610-50   End 30   1066   Off bottom   1614   Begnin 31   Off Camera coming up   1617   Off Camera out of water   1618   112   On board   Off board   1618   Off board   Off boar	1606		5			1014				-
1610-50         End         30         1066           1614         Begnin 31         0         Camera coming up           1617         096         Camera out of water           1618         112         On board							Off bo	ttom		The same
1614         Begnin 31         0         Camera coming up           1617         096         Gamera out of water           1618         112         On board		)			End 30	1066				* Continue
1617 096 Camera out of water 1618 112 On board						0	Camera	coming	up	
1618 112 On board						096	Camera	out of	water	
Head N to line 52						112	On boa	.rd		
							Head N	to line	52	

					Project 41069
Client _	BLM		Rep	Smith	Date 8/26/78
Work Area	Easter	n Gulf of	Mexico		Supervisor Bennington
Transect	Location	Area.2;	Line 101	SP line 52 E + V	
	TRANSPAR	ENCIES	SLIDE	VIDEO TAPE	
TIME	PAGE	ROW	fi	REEL COUNTER .	NOTES
17 07				31 112	Camera over, fix
					Start recorder
1722					Camera @ 200', begin maneuvering, 2 engines
					maneuvering, 2 engines
1733				618	
1742				750	
1745				799	Lowering camera to bottom
1748	62	11		829	235 '
1748					Begin 1 min fixes
1748-30					See bottom
1749-45	)			845	Short whips, or pens
1750		2		854	Sled in sed. visibility 5'-6'
7777 00				874	Sand \$
1751-30	63	1 :		8/4	Sand fine to med.
					Occasional 6" depression
					Small holes 2' 40/m²
1753-45		3		901	?
1754	)	3		901	
1754-30				912	1ft depression, coarser
1755	·			917	Fish Coarser
1756				931	Very poor visibility
1757		5		944	716
1757-30	)	6		950 967	Lift camera off a bit Lowered a bit, cannot see
1759				907	skid even
1759		7	2-9	974	2 squids
1800-30	64		2-3	985	SP 4, visibility better
1802-10		3		054	Hit bottom
1803	<u>'                                      </u>	3	2-10	054	Starfish SP 3
1804		5	2-11	026	Gentle rise, no difference
1007					

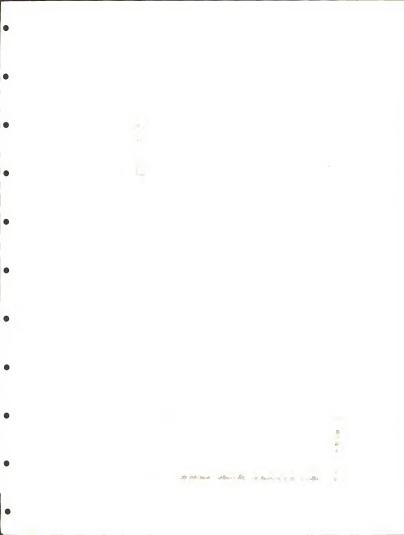
						Project _4	1069
Client	BLM		Rep	Smi	th	Date	3/26/78
Work Are	a Easter	n Gulf o	f Mexico				Bennington
Transect	Location	Area 2:	Line 101	SP line	e 52 E → W		
	TRANSPAR	ENCIES	SLIDE	VID	EO TAPE		
TIME	PAGE	ROW	#	REEL	COUNTER	TON	ES
1804-30	)				32	Hit bottom, coa	arser sed.
1805	64	6			40	Flounder	
1805-50					45	Passed SP 2	
1806-30		7			53	Groove in sed	
1807	· 65	22			-59		
1807-30	)				64	SP 1	
		3		END 31	70		
1809		4	B	EGIN 32	0		
1810-20	)	5		32	44	Fish	
1811		7	2-12		60	Outcrop 236-238	Q
1812	66	4	2-13		91	Sled hit botton	
1813		5 .	2 13		119	Still gradual	
			2-14			in bottom; aner	
1814		6			150	SP-2	ione
1816	67	1			194		
1816-30	)				208	Off bottom, Tor	
						cutting across	our bow
1825						Bring sled up	
1834					556	Camera on deck	
						Tape off	
18738						Buoy out; head	
						line 102, SP 10	)
						Too much shoot:	ing w/no
						guide, skip SP	
						101 & use xero	k side
						scan of Line 10	
-							

						Project	41069
BLM		Rep		Smit	h	Date	8/26/78
Easter	n Gulf of	Mexico				Supervis	or Benning
Location	Area 2	Line 10	2, SI	10	$V \rightarrow E$		
						NO.	THE
Ingi	ROW			KLLD		AND DESCRIPTION OF THE PERSON NAMED IN COLUMN 1	
				32	300		
				34	708		
					705		:1 10 51
					81 Q		comera
					010		Camera
						DOCCOM	<del></del>
68	2				830	See bottom	
		2-15				Starfish	
	3				839	Fish	
					0/1		
60	1				897	SP 1 sled	
						DI I DICC	~
		2_16				Soft fine-or	area end
		2-10				JOLE, LINE CO	ALSC SEU
		2 17				Wit hottom Cl	2
70							
		2-10					
							~
	/-					- DitCII	
						Fich	
		2-19					
71	1		END	3.2			
			END	J4	0.70		
	6		CIN	33	000		
			GIN			Off	
72 .	1						secured a
					350		ransect
					350	clamp) Dub planned	
	Easter Location	Eastern Gulf of location Area 2.    TRANSPARENCIES PAGE ROW  68 2  3 5  69 1 2 2 3 5 7 7 70 2 4 6 71 1	Eastern Gulf of Mexico Location Area 2, Line 10  TRANSPARENCIES PAGE ROW #  68 2 2-15 3 5 69 1 2 2 3 2-16 5 7 2-17 70 2 2-18 4 6 6 2-19 71 1 2-20 6 BE 2 2-21	Eastern Gulf of Mexico Location Area 2, Line 102, Si TRANSPARENCIES SLIDE PAGE ROW  68 2 2-15 3 5 69 1 2 3 2-16 5 7 2-17 70 2 2-18  4 6 2-19 71 1 2-20 END 6 BEGIN 2-22	Eastern Gulf of Moxico   Location   Area 2, Line 102, SP 10	Restern Gulf of Mexico   Location   Area 2, Line 102, SP 10   V → E	BLM         Rep         Smith         Date           Eastern Gulf of Mexico         Supervise           Location         Area 2, Line 102, SP 10 W + E           TRANSPARENCIES         SLIDE         VIDEO TAPE REEL COUNTER         NO           PAGE ROW         f         REEL COUNTER         NO           10         32         Camera over, tape on, lighted tape on, lighted tape on, lighted tape of line         Camera over, tape on, lighted tape of line           10         818         Arrive; lower bottom         Arrive; lower bottom           68         2         830         See bottom           5         871         Starfish           69         1         897         SP 1 sled           2         915         Starfish           3         2-16         920         Soft, fine-co           5         934         See           6         920         Soft, fine-co           7         2-17         968         Hit hottom Si           70         2         2-18         995         Ash           905         Ash         See         See           10         2-19         965         Min           10         2-20

Client BLM Rep Smith Date 8/26/18  Work Area Eastern Gulf of Mexico Supervisor Bennington  Transcot Location Area 2; Line 10 SP 10 W + E  TRANSPARENCIES SLIDE VIDEO TAPE REEL COUNTER  TINE PAGE ROW # REEL COUNTER Solve Tolling hills 7-10 off bottom Difficult to tell from TV tape because poor visibility. Had to move camera up & down to stop on bottom. Side scan show area of depression, quite wide, in area. Could be what we saw. Nay be due to current scouring. Plan to run \$ > \$0 m E off line 102 to pick up anomolies  2012 437 Moving sourth to get on line										Project 41069
VIDEO TAPE	Client _	BLM		Rep			Smith			Date 8/26/78
TRANSPARENCIES										Supervisor Bennington
### TIME PAGE ROW # REEL COUNTER NOTES    33	Transect	Location	Area	2; Li	ine 10	SP.	10	N	→ E	
33 Note: Eathometer shows rolling hills 7-10' off bottom Difficult to tell from TV tape because poor visibility. Hat to move camera up & down to stop on bottom. Side scan snow area of depression, quite wide, in area. Could be what we saw. Nay be due to current scouring. Plan to run S > N 60 m E of line 102 to pick up anomolies		TRANSPAR	ENCIES	SI	LIDE					
rolling hills 7-10' off bottom Difficult to tell from TV tape because poor visibility. Had to move camera up & down to stop on bottom. Sides scan show area of depression, quite wide, in area. Could be what we saw. Nay be due to current scouring. Plan to run S → N 60 m E of line 102 to pick up anomolies  2012 437 Moving sourth to get on	TIME	PAGE	ROW		#			COUNTE	R	
bottom Difficult to tell from TV tape because poor visibility. Had to move camera up & down to stop on bottom. Side scan show area of depression, quite wide, in area. Could be what we saw. Nay be due to current scouring. Plan to run S > N 60 m E of line 102 to pick up anomolies  2012 437 Moving sourth to get on							33			
from TV tape because poor visibility. Had to move camera up & down to stop on bottom. Side scan show area of depression, quite wide, in area. Could be what we saw. Nay be due to current scouring. Plan to run S > N 60 m E of line 102 to pick up anomolies  2012  437 Moving sourth to get on										rolling hills 7-10' off
visibility. Had to move camera up & down to stop on bottom. Side scan show area of depression, quite wide, in area. Could be what we saw. Nay be due to current scouring. Plan to run S > N 60 m E of line 102 to pick up anomolies										
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on bottom. Side scan show area of depression, quite wide, in area. Could be what we saw. May be due to current scouring. Plan to run S ÷ N 60 m E of line 102 to pick up anomolies		<u> </u>						·		
area of depression, quite wide, in area. Could be what we saw. Nay be due to current scouring. Plan to run S → N 60 m E of line 102 to pick up anomolies  2012 437 Moving sourth to get on										
wide, in area. Could be what we saw. Nay be due to current scouring. Plan to run S > N 60 m E of line 102 to pick up anomolies  2012 437 Moving sourth to get on										
what we saw. Nay be due to current secouring. Plan to run S → N 60 m E of line 102 to pick up anomolies  2012 437 Moving sourth to get on										
to current scouring. Plan to run S > N 60 m E of line 102 to pick up anomolies  2012 437 Moving sourth to get on										
to run S → N 60 m E of line 102 to pick up anomolies  2012  437 Moving sourth to get on										
line 102 to pick up anomolies  2012 437 Moving sourth to get on			-							
anomolies  2012 437 Moving sourth to get on										
2012 437 Moving sourth to get on										
2012 437 Moving sourth to get on line										
line	2012						alleman franchischer der	437		Moving sourth to get on
			<del></del>							line
							-			
							-			
	***************************************									
		·····								

							Project	41069
Client _	BLM		Rep		Smith		Date	8/26/78
Work Area	Easter	n Gulf o	f Mexico				Supervis	or Benningt
Transect	Location	Area	2; Line	102	Across	SP 11-9		
		-						
	TRANSPARI		SLIDE		VIDEO			
TIME	PAGE	ROW	#			OUNTER		OTES
2023	72	2	2-23		33	613	Headed N	
2024			2-23			630	Lower camera Begin, fixes	
2024						638	Bottom in vi	
2024							POLEOII III AI	.ew
2027		5				680	SP 0, Sled s	
2027-50						685	Swimming aff	loat
2028-30		7	· · · · ·			694	Shell fragme	ents
2028-45						699	Fish	
2029	73	1				702	Starfish	
2029-50						714	Whiteshell?	
2030		2				718		
2030-40							SP 1, cut er	gines
				-			drift	
2031						742		
						744	Small school	
2032		4	2-24			753	Skid in sed.	; fish
2033		6	2-25			761		
2033-30		7		-		764	Fishes	
2034	74	1				772	Hit bottom,	seems hard
							coarse	
						775	Flounder	
2035			2-26			780		
2035-45		2				796	SP 9	
							Visibility 5	-6 ft
2038						828		
2039		3				864	Fish over bo	ttom, SP 8
			2-27			892	Fish, bottom	
			2-28:			914	Coming up	
-			2-29				in depression	
			2-30					
							Wide depress	ion

							Project	41009
Client _	BLM .		Rep	Smith			Date	8/26/78
	a Easter						Supervi	sor Bennington
Transect	Location	Area 2;	Line 102	Transect	S -> N	60m		
	TRANSPARI	ENCIES	SLIDE		TAPE			
TIME	PAGE	ROW	#	REEL C	COUNTER		1	NOTES
2045 ·	75	1		33	922			
2046-15	<u> </u>	2			929	Whi	P	
2046-35	5				933	Sta	rfish	
			2-31			Nav	igation	signals weak
2047		3			943	Hit	bottom	,
			2-32		945	See	sed. t	exture
2049.					965	Cam	era comi	ng up
2056						Cam	era & sl	ed on
					050	dec		
2103						Buo	y on boa	rd
							d slowly	
						Pen	sacola	
			The second					
		A						



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